

WORKBENCH

35c / NOVEMBER-DECEMBER / 1965

54

BUILD THIS DANISH- INSPIRED ROCKER



Modern Workbench

TULLO RN

rs
EDWIN ELLIS
219 9TH AVE
BELMAR

2 01119EL1912194 4NQV65

Madonna and Window

Using Masonry Fasteners

New Rubber Stamp Business Pays Beginners ^{UP TO} \$9.20 an hr.

START AT HOME IN SPARE TIME WITH THIS LITTLE TABLE TOP MACHINE . . . WE'LL EVEN HELP FINANCE YOU!

The multi-million dollar Rubber Stamp Business—once controlled by a few big companies—is now being taken over by small home operators—one in each community throughout the U.S. Men and women who have this inexpensive machine can turn out huge quantities of Rubber Stamps with special wording that buyers once were forced to order from big cities. Material costing only 27¢ makes a stamp that sells for \$1.80. The machine that does the work is simple and easy to operate and it turns out as many as six Rubber Stamps at a time each with different wording such as names, addresses, notices, stock numbers, prices and other "copy" needed by offices, factories and individuals. Working full capacity, it can earn as much as \$9.20 an hour for the operator! Now you can get into the big-pay business yourself, with your own home as headquarters. You don't need any experience. We supply everything, including complete instructions and eight ways to get business coming in fast. Start making up to \$9.20 an hour from the very beginning. Cash in on the profitable Rubber Stamp business right away.

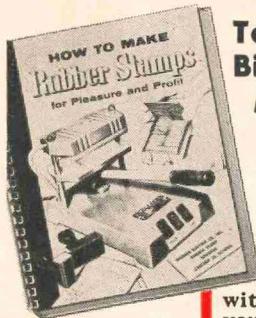


TAKES UP
ONLY 2
SQUARE FEET
OF SPACE

**WE HELP
FINANCE YOUR
START IN BUSINESS**

● Read the complete and fascinating Rubber Stamp story in a big 110-page Book. Learn how we even help finance your start. The Book is profusely illustrated with more than 100 pictures and photographs. And you can read it for a full two weeks without risking a penny of your own money!

NEW WARNER SUCCESS PLAN



110 PAGES
MORE THAN 100
PICTURES

Now Ready to Mail
Tell Me Where to
Send Your Copy

See
COUPON

**Tells How to Build—Step by Step—to
Big Profits and Personal Independence
Read This Plan for Two Weeks
ENTIRELY AT MY RISK!**

In this amazing Plan you will find exact and detailed instructions for starting a Home Business in spare time—without giving up your present job and without risking the loss of a single pay check. The Warner Plan shows you—with pictures, photographs and drawings—just how to make Rubber Stamps just as good as those turned out by the big companies. It shows how to get orders without canvassing or house-to-house selling. It shows you how to expand, how to get others to work for you and how to be SURE of at least twice the money you make on your present job for a life of personal independence.

But don't make any decision now. Read the Plan first—entirely at my risk. Then—after you have made a careful investigation—after you have talked things over with your family—only then do you decide what you want to do.

The thing to do now is to get full details which I'll send you FREE. No salesman will call to urge you to buy anything. Mail coupon today—or just send a postcard—and I'll see that complete information goes out to you by return mail—postpaid.

RUBBER STAMP DIVISION, Dept. R-6-MW
1512 Jarvis Avenue, Chicago, Illinois 60626

RUBBER STAMP DIV., Dept. R-6-MW Send No Money
1512 Jarvis Avenue, Chicago, Illinois 60626

Please rush full particulars. Tell me about your financing plan and about the little machine that can get me started in the profitable Rubber Stamp Business at home in spare time. Everything you mail me is FREE. No salesman will call.

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP CODE _____

**Here's what the new
WARNER PLAN Tells You
about Making Money
with RUBBER STAMPS**

1. HOW TO have fun **now** and at the same time provide for a secure and prosperous **future**.
2. HOW TO check the advantages of operating a Rubber Stamp Business in your own community.
3. HOW TO acquire a general knowledge of the business based on a brief history of the Rubber Stamp.
4. HOW TO visualize the scope of the Rubber Stamp market.
5. HOW TO make a Rubber Stamp (general outline).
6. HOW TO assess the value of Warner Equipment.
7. HOW TO get acquainted with the "Tools of your Trade."
8. HOW TO make a Rubber Stamp (specific procedure).
9. HOW TO mount a vulcanized Rubber Stamp.
10. HOW TO make "Special" Rubber Stamps.
11. HOW TO cut plastic Matrix Board for the chase.
12. HOW TO get the right price for the Rubber stamps you make.
13. HOW TO price your complete Rubber Stamp Line.
14. HOW TO figure costs so you will be sure of a substantial profit on all the work you turn out.
15. HOW TO set up your workshop.
16. HOW TO get the most out of Warner's "Eight Tested Sources for Getting Business."
17. HOW TO operate at peak efficiency when **YOU ARE YOUR OWN BOSS**.
18. HOW TO get started on a cash outlay so small that **you can get back your entire investment inside of two weeks**.

Can you use an Extra \$81 Weekly for 9 hours Service while your spare time Builds You a Business?

Stay with your job till the Profits in Own Business Exceed Present Salary

We'll show you how to average each week, from only 9 hours service, these gross profits: working alone, \$81 . . . with one helper, \$135 . . . two servicemen doing

all the work for you, \$108. Additional hours boost your week's profit. With servicemen, your income is unlimited. Step up to a higher living standard.

Postage Stamp brings FREE book telling how. We guide you Step by Step...and help finance you.

If you've wanted to BE YOUR OWN BOSS . . . to become financially independent . . . have a fast growing income . . . and own a Nationally Advertised business, now YOU CAN.

You can stay at your present job while your customer list grows . . . then switch to full time, lining up jobs for your servicemen to do.

One small job a day brings a good starting income. As you add full or part-time servicemen, your income is limited only by your own effort.

Dealers operate from a shop, office, or their home. Equipment is portable...the electric Foam-

ovator converts to a convenient carrying case.

At the start, you may want to render service yourself . . . or you can start out with servicemen. This business is easy to learn . . . easy to start . . . so easy to service that women dealers often do it. We prefer you have no experience . . . not have to "unlearn" old methods.

We are NOW enlarging this worldwide system of individually-owned service businesses. If you are reliable, honest and willing to work to become financially independent, we invite you to mail the coupon.

It's Easier than You Think to Start Your Own Business

When you receive our illustrated booklet, you will see the way we show you step by step how to quickly get customers . . . how to steadily build more customers from their recommendations.

All six services are rendered "on location" in homes, offices, hotels, theaters, churches, clubs, motels and institutions.

These superior, safer and convenient methods spread Duraclean dealerships throughout North and South America, Africa, Portugal, England, Israel, Norway and many other countries.

National Magazine advertising explains the

superior merits of your services, builds your customer confidence and brings job leads to you.

We and a Duraclean dealer will train you and assist you. He'll reveal his successful, proven methods. We show you all you need to know.

You have pre-tested newspaper and yellow-page ads, commercials, and a full mailing program.

Furnishings stores, insurance adjustors, and decorators refer jobs to our dealers. These year 'round services are in constant demand.

TODAY is the time to reserve a Duraclean dealership . . . before someone takes your location.

Start Small, Grow Big...in this Booming Business

Many men have said to us, "I can't afford to give up my job till I know I have a sure thing . . . a sound business that will provide both security and a better living for my family."

That made sense to us so we worked out such a plan . . . and those same men are now enjoying Duraclean dealerships in many communities. You don't experiment. You use tested, proven methods. **You have our backing and "know how."**

Does this appeal to you? Don't decide now. Mail the coupon so you'll have the facts to decide wisely. There is no obligation whatsoever. You will then know whether this is what you want.

You can start small and grow big just as we did. A third of a century ago Duraclean was an idea . . . but it caught fire and spread rapidly to a worldwide service. It spread because it was based upon (1) superior processes and (2) proven customer-getting methods.

Our first service, the care of carpets and upholstery, exemplifies these superiorities. It not only cleans; it enlivens the fibers . . . revives dull colors. Pile rises with new life. Furnishings are used again in a few hours.

There's no machine scrubbing. No soaking. Duraclean cleans by absorption. Mild aerated foam lightly applied, lifts out dirt, grease and many unsightly spots like magic.

Government figures show service businesses growing faster than industries and stores . . . \$750 million yearly potential just in rug and furniture cleaning. You have 5 other services.

Space here will not permit describing your other services but they are fully explained in the free booklet we'll mail you. You have six opportunities for profit on every job.

A few hundred dollars establishes YOUR OWN business. A day's profit more than takes care of the monthly payments we finance for you.

Men frequently take in partners.

We furnish electric equipment and enough materials to return your TOTAL investment. If you have good habits and know the importance of customer satisfaction, you can likely qualify for a Duraclean dealership.

It's been said, "Opportunity knocks but once at every man's door." This could be that one rare opportunity in your life.

It is surprisingly easy to learn this business. You can decide from the information we will send you whether to apply for a dealership. So, with no obligation whatever, mail the coupon TODAY.

Resale Service

If, because of illness, moving or for any reason a dealer wants to sell, we maintain a service to locate buyers and to help him sell.

Dealerships resell at up to 10 times the dealer's cost. R.D.K., after 5 months, sold for \$2,000 above his cost. L.L., after 30 months, got \$7,116 more than he had paid. The value of your dealership and franchise grows monthly.

FREE BOOKLET tells how to start Your Own Business

With no obligation, we'll mail you a letter and 24 page booklet explaining this business . . . how and why your income grows . . . how we help finance you.

Then decide if this opportunity fulfills your dream of independence and a much bigger income.

Your location could be taken tomorrow . . . so mail coupon today.

Find Out with NO OBLIGATION



Mail this coupon TODAY
It may put you in business

Duraclean Co., 5-56N Duraclean Bldg., Deerfield, Ill. 60015
With no obligation, mail letter with 24 page illustrated booklet explaining how I can increase my income and family security with a Duraclean Dealership.

Name _____

Address _____

City _____ State _____ Zip _____



more to
choose from
when you buy
P&C tools

You have more to choose from when you select P&C Tools for your shop . . . more kinds of tools, more sizes, more quality in every one. From planes to pliers, from screwdrivers to saws, from braces to bevels you'll find a tool with the P&C label that gets the job done faster and easier.

Make yours a P&C QUALITY SHOP



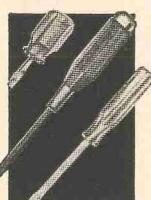
PLANES

The easiest way to smooth a board. Adjust easily, and stay sharp longer. Handles give balance and control for square edges and ends. Designed by men who know tools.



SCREWDRIVERS

You'll never find a better screwdriver. Blades are of special alloy steel shaped for positive screw-slot fit. Handles are of tough, acid resistant, shock-proof plastic.



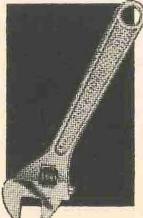
TAPE RULES

You get accurate and positive measurements every time with P & C Tape Rules. Both push and power types. Figures are easy to read. Blades stay straight. All lengths to choose from.



CLIK STOP ADJUSTABLE

No other adjustable wrench like it. The one and only that holds the adjustment without crawling or creeping in use. Yet you have no levers to push. Beautiful chrome finish.



Look for this colorful, easy-to-select-from tool department on a stand. Complete selection at a glance. All tools priced, sized and convenient to inspect. Only P & C provides this easy shopping convenience.

P&C TOOL COMPANY

Portland, Oregon 97222

Subsidiary—Pendleton Tool Industries, Inc.

WORKBENCH volume 21 number 6

Contents—November-December, 1965

FEATURES

Buying a New Home.....	10	Flood-Flash Box	56
Modernizing Magic, Part III.....	16	Fritz Franklyn	
Theodore Seligson, Architect		Fire-Engine Rocker	58
Danish-Inspired Rocker and Straight Chair	18	C. L. Widdicombe	
Phil McCafferty		Portrait Stand	63
Modern Workbench	22	Harold Jackson	
Edwin M. Love		In the Next Issue.....	13
How To Use a Wood-Turning Lathe, Part II.....	26	WORKBENCH Handsaw Award.....	45
Pat Snook			
Using Masonry Fasteners.....	30	DEPARTMENTS	
Ralph Treves		Letters to the Editor.....	4
Staple-Gun Tips	38	Shoppers' Showcase	14
Product Report:	40	Book and Booklet Reviews.....	44
Chain-Saw Sharpener Knife Serrator		WORKBENCH Research Department.....	46
Radiator Covers	42	Refinishing Clinic	48
Central Vacuum-Cleaning System.....	52	Restoring and Refinishing Furniture Veneered Surfaces W. A. Lincoln	
What's New in Glass.....	54	WORKBENCH Women's Page.....	64
Pipe Rack (Hand-Tool Project).....	55	Madonna and Window Jeanne Propst	

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Contributors should make a copy of all manuscripts submitted. Every effort will be made to return rejected manuscripts, photographs, and diagrams, if accompanied by sufficient first class postage, but WORKBENCH will not be responsible for any loss of such material.

SELL Winter Comfort!



All 12 Items Below Sent Free

- 1 Big new thirty-two page illustrated Dealer's Manual with retail and wholesale prices.
- 2 Sample piece of the actual aluminum siding used in the Alum-A-Kit.
- 3 Complete explanation with example as to how it is possible to earn \$2,000.00 in next three weeks selling Alum-A-Kits.
- 4 Customer Order Pad with your name imprinted . . . for taking Alum-A-Kit orders.
- 5 Exclusive Franchise with your name imprinted to prevent too many dealers being placed in your area.
- 6 Sixteen page Reynolds' prepared booklet entitled "Facts About Aluminum Siding."
- 7 Copy of Exclusive 20 Year Warranty issued to each of your customers.
- 8 Map of United States showing location of over 200 Aluminum Industries Exclusive Franchised Dealers in January, 1964.
- 9 Color Chart showing all colors available in the Alum-A-Kit.
- 10 Filled out orders as examples . . . both wholesale and retail.
- 11 Separate retail price list to show your customers.
- 12 Big eight page illustrated Instruction Manual.

MAIL THIS APPLICATION FOR COMPLETE INFORMATION AND BIG 32 PAGE DEALERS MANUAL (IF ACCEPTED)

SHIPMENTS MADE TO:

CANADA • ALASKA
PHILIPPINE ISLANDS
HAWAII • JAPAN

ALUMINUM INDUSTRIES
Dept. D-115
Kansas City 11, Missouri



ALUM-A-KITS®

are Terrific Insulation

NOW \$9⁹²
PER MONTH

Now Your Customer Pays Only \$9.92 Per Month (No Down Payment) To Purchase A Complete Alum-A-Kit* Which Not Only Insulates And Beautifies His Home But Saves Him Hundreds Of Dollars On Paint, Wasted Fuel, Depreciation And Upkeep.

Insulation Plus Beauty and Economy

The above payment of \$9.92 per month is what your customer would pay for an Alum-A-Kit* large enough to cover a modern 34'x24' home. The cash selling price would be \$396.64 (your cost from Aluminum Industries would be \$296.64). The estimated paint, fuel, up-keep and depreciation your customer could save each month could amount to considerably more than the small \$9.92 payment. You would receive your profit of \$100 immediately. Incidentally, you can earn profits as high as \$1,000.00 on larger Alum-A-Kit* sales. What easier way is there to earn \$100.00 than to show someone how he can save money by buying an Alum-A-Kit? The wonderful part about it is that it is absolutely true—he will save money.

Gain Experience First

In order to gain application experience we ask that you purchase one Alum-A-Kit* for your own home (or the home of a friend or relative) before going out to sell the general public. You will be asked many questions about applying an Alum-A-Kit* that you would not be able to answer unless you have had first hand experience. Applying an Alum-A-Kit* will give you this necessary experience.

Excellent Insulation

Alum-A-Kit* insulated with Celotex backer board are equivalent in insulation value to two layers of brick or nine asbestos shingles or eighteen inches of poured concrete. The season for selling insulation is here. An

Alum-A-Kit* costs no more than blown-in rock wool yet your customer receives a paint free condition and beautification to boot. Insulation blown in the walls often causes condensation or moisture in the wall—whereas an Alum-A-Kit will keep the inside of the walls bone dry. If you have a home which you can cover (to qualify for a franchise) then mail the coupon below. Do it now.

★ ALUM-A-KIT

A Complete kit containing all tools, instructions, aluminum siding. (Made from high grade REYNOLDS ALUMINUM) and accessories to cover a certain size home. Alum-A-Kits are available in 14 sizes, 4 styles and 49 color combinations. Absolutely the finest quality available anywhere in the world.

APPLICATION FOR PART TIME DEALERSHIP AND EXCLUSIVE FRANCHISE

TO: Aluminum Industries, Dept. D-115, Kansas City 11, Missouri

YES I OWN A HOME SUITABLE FOR COVERING WITH ALUMINUM SIDING. PLEASE CONSIDER ME FOR YOUR PART TIME HOME DEALERSHIP.

MY COUNTY _____ STATE _____

MY AGE _____ OCCUPATION _____

ADDRESS OF HOUSE I OWN _____

PRINT YOUR FULL NAME AS YOU WANT IT TO APPEAR ON YOUR EXCLUSIVE FRANCHISE.

PRINT FIRST NAME

MIDDLE NAME

PRINT LAST NAME

I UNDERSTAND THAT ALUMINUM INDUSTRIES has the right to accept or reject this application. I will be notified within 10 DAYS. THIS APPLICATION PLACES ME UNDER ABSOLUTELY NO OBLIGATION WHATSOEVER.

Sign Here

Print Your Address Here

Town

State

Zip Code

CUTS GRIME

DAP® Waterless HAND CLEANER & CONDITIONER

Dissolves dirt soap can't get! Removes grease, oil, ink, carbon paper smudges, shoe polish. Lanolin conditions skin, prevents chapping. Hexachlorophene kills bacteria on contact. Even smells clean! Sold at leading hardware, building supply, paint and specialty stores.



DAP DAP INC., Dayton 31, Ohio
SUBSIDIARY OF *Plough Inc.*

THE POCKET SIZE MACHINE SHOP Dremel MOTO-TOOL

Haviest tool you'll ever own. Moto-Tool's high speed (27,000 rpm) is ideal for precision grinding, drilling, polishing, carving, engraving, deburring, sharpening. Does fine detail work with pin-point accuracy. Eliminates time consuming hand work, gives the finished job a professional look. Weighs only 13 oz. — handles easily as a pencil. Fastest, most powerful tool of its kind. Widely used by tool and die makers, model builders, gunsmiths, repair men, schools



No. 2 Moto-Tool only \$19.95
No. 2 Moto-Tool Kit 29.95
(Incl. No. 2 Moto-Tool & 23 assorted accessories in steel case)

NEW HEAVY DUTY NO. 3 MOTO-TOOL

New high torque motor designed for industrial use. Same features as No. 2 plus 50% increase in power. Weighs only 18 oz. Complete with $\frac{1}{4}$ " and $\frac{3}{8}$ " collets and finger grip in steel case... \$29.95

SEE YOUR DEALER OR WRITE FOR CATALOG
DREMEL MFG. CO. DEPT. 375K, RACINE, WIS.
QUALITY POWER TOOLS SINCE 1934

"Jorgensen"
and
"Pony"

CLAMPS

hold your work
These and many other designs described in literature sent FREE upon request. For big, 32-page "HOW-TO-CLAMP-IT" catalog, send 25¢.



the clamp folks | **ADJUSTABLE CLAMP CO.**
415 N. Ashland • Chicago 22, Ill.

Letters to the Editor

Dear Mr. Hedden:

Solid Honduras mahogany was used for the Powder Stand I made from plans in the Jan.-Feb., 1965 issue and it is rubbed with six coats of oxidized linseed oil. My only departure from the drawing was to install a $\frac{1}{4}$ " x 13/16" molding around the outside edge of the top, rather than the square piece fitted on the top as indicated in the plans. The molding covers the edge grain and eliminates a joint. It is truly a beautiful piece of furniture. May we have some more "off-beat" antiques like the powder stand?

S. Appleby, Washington, D. C.



Dear Mr. Appleby:

We definitely will be on the lookout for "off-beat" items and will publish them when they are available. You certainly have done an excellent job on the Powder Stand. It must create compliments for you all the time.

Dear Mr. Hedden:

When I want a challenging project to build, such as a spinning wheel, loom or violin I know that WORKBENCH is the only magazine that will have it. Keep publishing such interesting articles.
R. R. G., Muskegon, Mich.

Dear Mr. R. R. G.:

Letters from readers tell us what they want to see. As a help to us for future scheduling, we would appreciate receiving a letter or postcard from everyone building the violin, stating simply "I am building the violin."

Dear Mr. Hedden:

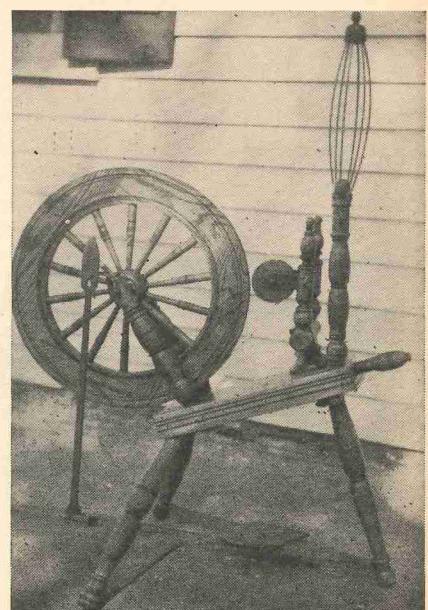
In the article on the Philadelphia Highboy, on page 10, May-June, 1965 you say you do not know where legs for the highboy can be purchased. Am enclosing a page from the catalog of Albert Constantine and Son, on which there is a ball-and-claw leg very similar to the one on the highboy.
Erwin Butcher, Pleasantville, N.J.

Dear Mr. Butcher:

All we can say is, oops! And Albert Constantine has been an advertiser with WORKBENCH for many years. The leg is similar, measuring 9 in., where ours is 9 $\frac{1}{8}$ in. The slight difference in height should present no problem.

Dear Mr. Hedden:

Would like to say I have never had more fun or challenge than in making the spinning wheel described in the Jan.-Feb. and March-April, 1963 issues. Made the great wheel with dowels in both ends of the spokes; made the hub in two pieces, then squeezed the halves together on the spokes with an old brass plumbing fixture. A brass nut on each end of the fixture is hidden by a wooden "hub cap."
F. H. Shepherd, Oconomowoc, Wisconsin.



Dear Mr. Shepherd:

Splitting the hub was a very clever idea, and we can tell you have done considerable woodworking by your approach, and by your excellent craftsmanship.



Hang it all on a wall for less than \$50.

Western Wood Storage Projects

We've taken a new look at that old storage problem and have drawn up easy-to-follow plans designed to turn wasted wall space into usable tuck-away space.

The Study Center above is just one of the build-it-yourself projects you'll find in Western Woods' newest plans book . . . Storage. There's also a smart vanity for your favorite little girl; an adjustable wall that combines the function of adjustable shelving

strips with the beauty of Western Wood moulding; and a "catch-all" unit that offers unlimited possibilities in attacking storage problems.

Home project men appreciate Western Woods' easy workability. It's easy to nail, easy to saw, easy to paint and easy to stain. Due to its natural beauty, many don't even take a brush to it. Clip the coupon and enclose 10c and we'll send you this latest

project book on storage. We'll also mail you the new full-color Storage Idea Booklet featuring a unique storage wall that moves.

Please send the Storage Idea Book and Plans Book. Enclosed is 10c.

Name _____

Address _____

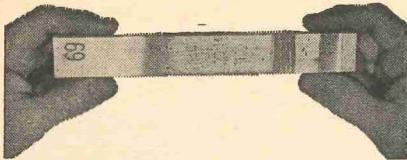
City _____ State _____ Zip _____

WESTERN WOOD PRODUCTS ASSOCIATION

Dept. WB-1165, Yeon Building,
Portland, Oregon 97204



Take the Guesswork Out of Wood Finishing



Finished sample panels show each step and each coat with specifications. Size: 1" x 8". Only 15c each.

Here are 38 beautifully finished sample wood panels showing a section of the bare wood, each step and each coat, including rubbed effect. Each panel is numbered and the catalog shows the corresponding description and materials used in proper sequence to duplicate the result. We'll send one or all 38, postage paid. With each order we'll include our new 44-page catalog of latest wood finishes and supplies. If not satisfied, return in good condition for full refund. Sorry, but this offer good only in U. S.

GASTON FINISHES, Dept. W

Bloomington, Indiana

Please rush panels (numbers circled below) at 15c each. Full payment enclosed.

1 Natural Walnut	43 Old Pine
2 Brown Walnut	43-3 Softone
3 Natural Oil Finish	50 Old Cherry
3F Walnut on	52 Red Cherry
Light Wood	53 Transitional
4 Gray Walnut	54 Medium Red Cherry
5F Restoring Antiques	60 White Stain
6 Antique Platinum	63 Driftwood
9 Natural Mahogany	64 Maple
10 18th Cen. Mahogany	65 Walnut
11 Brown Mahogany	65-1 Pecan
12A Brown Oak	66 Mahogany
20 Limed Oak	67 Maple-Cherry
30 Light Fruitwood	67-1 Brown Birch
31 Fruitwood	67-2 Light Maple
32 Light Brown Maple	68 Philipine Mahogany
34 Dark Brown Maple	69 Antique White
35 Duxbury	70 Black & Gold
36 Red Maple	77 Honey Maple
40 Antique Distress Pine	\$5.50 enclosed for all 38 panels (\$5.70 value)

Name.....

Address.....

City.....

State.....

XMAS PATTERNS FULL SIZE

NATIVITY SCENE.

Almost life size patterns of Mary, Christ Child, Joseph, Three Wisemen, Lamb, etc. Easily made, no tracing, just mount, cut out and paint. Plans for stable included. All for \$2.50.



SANTA AND REINDEER are easy to make with these full size patterns. The reindeer are 45x55 inches, the sleigh with Santa is 49x52 inches. Just trace, saw out and paint. Only \$1.25.



BIG JOLLY SANTA in life like three dimensional effect. 5 ft. 3 in. high. Easy to make with full size patterns. No tracing, just mount, cut out and paint. Only \$1.25.

MASTERCRAFT PLANS

Dept. 11XB, 7041 Olcott Ave., Chicago, Ill. 60631

CASTING SECRETS REVEALED!

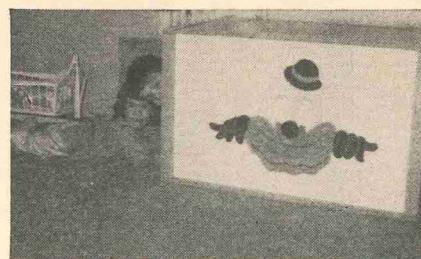
Learn how to make big money casting plaques, bookends, figurines, etc., with X.L. rubber molds.

X.L. Rubber Pts. \$2.50; Qts. \$4 (postage extra). 3 models and enough rubber for molds. \$1.50 prepaid. U. S. only. Send 25c (refundable with order) for 40-page catalog describing this profit-making business!

PLASTIC ARTS STUDIO 3403 S. MADISON, DEPT. 3 MUNCIE, INDIANA

Dear Mr. Hedden:

Made the Toy Box from plans in the Nov.-Dec., 1964 issue. Left off the casters at my wife's suggestion, to prevent it from being found parked in inconvenient places around the house. When the "boss" of the project, my 3½-year-old, saw the project taking shape he pronounced it a "monkey trap" and it has captured two little "monkeys" that I know of. Art Johannessohn. Babbitt, Minn.



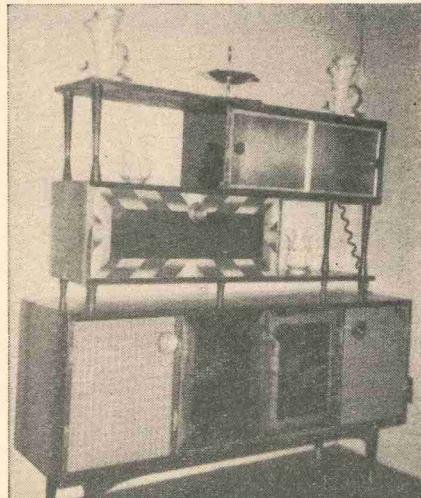
Dear Mr. Johannessohn:

When a project designed for youngsters is as well accepted by them as the Toy Box has been by yours we know we have a winner. Our thanks for sending the photo.

Dear Mr. Hedden:

Enclosed is a photo of the cover project in the Nov.-Dec., 1964 issue. It was an ideal item to fit the end of our living room that serves as a dinette. I used ¾-in. exterior-grade plywood and covered it with walnut veneer. On the door of the silverware compartment I have a strip of burl, with scraps left from the shelves arranged in an ornamental border. My wife likes the buffet both for its beauty and convenience. WORKBENCH is the most informative magazine I have ever read.

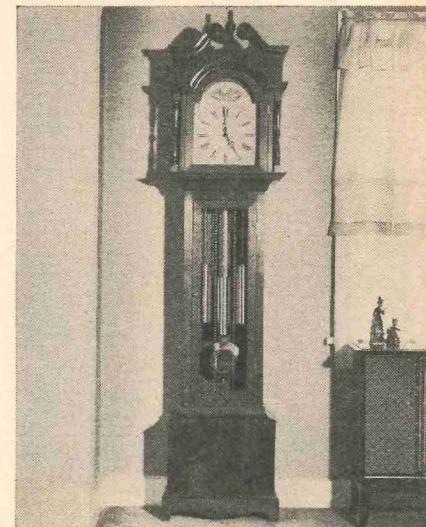
John Cook, E. Gary, Ind.



Dear Mr. Cook:

We have had quite a number of readers build the chest, but yours is the first with inlaid veneering. Most unusual and attractive; we send our congratulations.

In the spring of 1964 we had a very pleasant visit with Mr. Herold V. Parkes of Kansas City, Kans. Mr. Parkes dropped by to ask for information on the various companies who advertise materials for making grandfather clocks. This April Mr. Parkes stopped in again, and brought a photograph of the very beautiful clock he built from materials he had ordered from sources we gave him. A fine job, Mr. Parkes, we congratulate you.



Dear Mr. Hedden:

Enclosed is a photo of the slot-racing track I made from plans published in the Jan. - Feb., 1965 issue. Some of the changes I made were to cut the slots all the way through the hardboard to permit easier movement of some cars. This made it necessary to add 1 x 2 cross members about every 18 in. under the track. For fences I installed 2-in. lengths of ½-in. dowel spaced about 2 in. apart. The track has given many people hours of pleasure from ages 6 to 60.

O. H. Sanden, Redwood Falls, Minn.



Dear Mr. Sanden:

You have done a great job on the track and we are especially intrigued by the very wicked chicane just under your hands. We imagine quite a number of drivers "lose it" on that part of the track.

Jay W. Hedden

Mail coupon at once for up-to-date Constantine Catalog offering 2,000 products for easier... better
woodworking

Find Instantly Whatever You Need to BUILD... RESTORE REFINISH anything of WOOD

ENJOY woodworking more! Let Constantine's biggest, newest product-finder Catalog help you accomplish worthwhile shop and home projects.

You'll save time and save money shopping quickly by mail from the world's largest catalog source for imported and domestic wood. Always ready to ship—finest cabinet lumber, colorful veneers, carving blocks, turning squares, matched plywood, inlays and borders in endless variety. Magnificent selection of kinds and sizes. All woods first quality, kiln dried, ready for furniture, craftwork and home improvements.

Examine Woods in Natural Color!

See 60 glamorous woods in full, radiant color. Large Selector Chart, pages 44-45, helps you select woods in natural color every time you buy.

CABINETMAKING woods from the forests of the world. See page after page of colorful woods that give style to whatever you build. Thicknesses from $\frac{1}{8}$ to several inches. Widths and lengths galore. Rosewood, purpleheart, ebony, satinwood, zebra, teak, cocobolo, lignum vitae, avodire, lemonwood, padouk, boxwood, cherry, maple, walnut, mahogany, many more.

Picture-packed pages show CABINET HARDWARE—Pulls, latches, hinges, locks, leaf supports, sliding door hangers, hi-fi slides, etc. Books! Plans!

FURNITURE HARDWARE. Chippendale, Queen Anne, French, Early American, Modern, etc.

WOOD FINISHES with step-by-step instructions. Huge section tells what to use to create stunning blond finishes, walnut, mahogany, pine, cherry, ebony, Swedish natural finish, many others. Everything you need to finish new wood, refinish old wood, match and restore anything made of wood. Success assured.

UPHOLSTERY tools and materials for caning, rush-seating, rebuilding overstuffed pieces. Complete help in today's biggest money-saving hobby.

WOOD TURNING BLOCKS. All shapes, sizes and best kinds of blocks, squares and spindles.

SIMPLIFIED VENEERING. Read about Constantine's revolutionary new method. Glamorize craftwork. Beautify beat-up furniture fast. See grand array of MONARCH VENEERS measuring EIGHT FEET LONG.

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sizes. Low-cost beginner's tool set, and 35 special shapes for the advanced craftsman.

Pattern & Instructions for Carving American Eagle

New Catalog features famous spread eagle, symbol of freedom, carved in wood for you to copy. See Catalog page 18 for complete details of FREE offer of full-size pattern with every order for eagle carving block. Discover for yourself the thrills others are enjoying with chisel and wood.

New Materials! Tools!

Time-savers! Labor-savers! Glue that needs no clamps! Clear finish that replaces shellac, varnish, lacquer. Inlay picture kits 99¢. Wood identification kits. Clock assembly kits. And hundreds of most-needed products. Many found nowhere else.

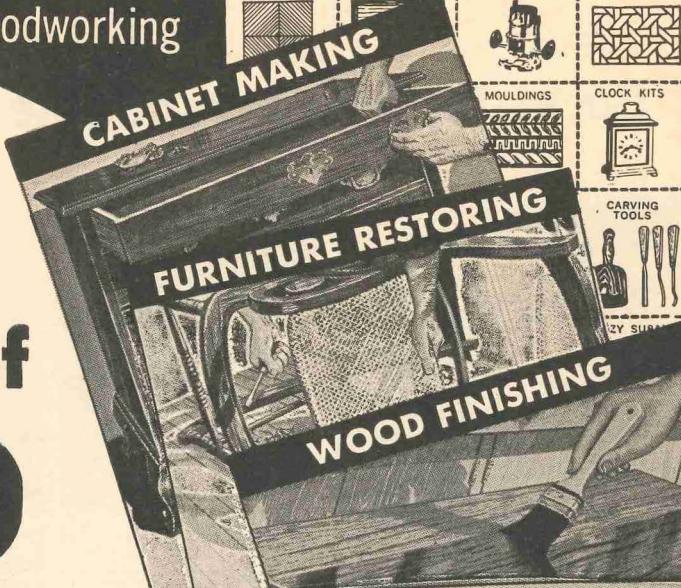
Big Picture-Packed Pages!

8½ x 11

ACT NOW and start benefiting from unsurpassed values in the new Constantine Catalog-Manual. Serving craftsmen since 1812. Send coupon with 25¢ toward mailing. Hurry to get YOURS!

Free Bonus! 101 Project Ideas!

What to make? What to do next? Constantine gives you 101 helpful answers in a brand-new catalog supplement 101 THINGS TO MAKE. It tells how to go about 101 practical, worthwhile shop projects and home improvements. Comes to you absolutely FREE if you send Catalog coupon as directed AT ONCE. Tear out. Mail now!



TEAR OUT! MAIL NOW!



ALBERT CONSTANTINE AND SON, INC.
2050 Eastchester Rd., Bronx, N.Y. 10461 Dept. S-8
Enclosed 25¢ for mailing new 1966 Constantine Catalog-Manual for woodworkers.

Name

Address

City State Zip

PLUS
FREE
"101
Project
Ideas"

ALBERT CONSTANTINE AND SON, INC.
2050 EASTCHESTER ROAD, BRONX, N.Y. 10461 DEPT. S-8

Ronson introduces the (Complete with large

Burns for hours on butane gas. Adjusts from pinpoint to



STARTS CHARCOAL FIRES.



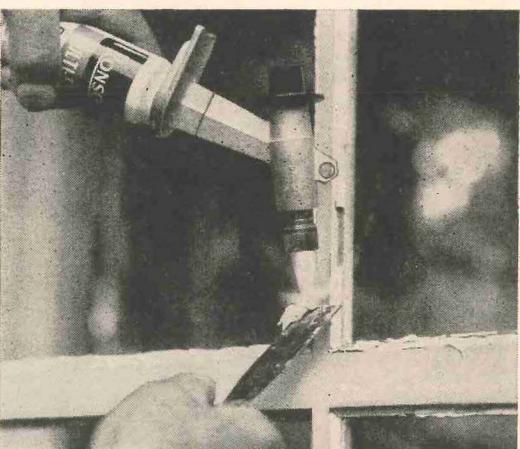
MELTS ICE.



STARTS LOG FIRES.



REMOVES PAINT.



SOFTENS PUTTY.



FOR HARD-SOLDERING METALS
SUCH AS THIS METAL CHAIR.

O.K. You own a hammer, a chisel, a screwdriver—a lot of good, hardworking tools.

So when something at your house needs fixing, you're ready, willing and able to go to work.

Or are you?

Ever try to thaw a frozen water pipe with that hammer?

Or unstick a cracked floor tile with that screwdriver?

Or chip ice off the front steps with that chisel?

Humiliating, isn't it?

(Not having the right tool at the right time can make you feel about as self-sufficient as an old-maid schoolteacher fixing her first flat tire.)

But now Ronson has a new torch that can do all those

things. And more.

You don't have to be a handyman to put it to work. It starts charcoal and log fires quickly. It burns leaves and caterpillar nests. You can even use it to put a nice brown meringue on Baked Alaska!

It weighs less than 13 ounces. Much smaller than other leading torches, it takes very little storage space. It's as compact and easy to handle as a flashlight.

A blast from this torch can spot-kill a weed faster than you can yell "Crabgrass!"

A broken wire fence needs mending?

This torch can do a perfect soft-solder job in less than a minute.

It can hard-solder a $\frac{1}{2}$ " copper tube to a brass elbow in just a few minutes.

It can help remove old paint.

Soften old putty.

Fix a kid's toy.

Help refinish furniture.

Sweat copper tubing.

(Whew!)

Loosen rusted pipe fittings and connectors. (Just try to get in and around pipes and fittings with a larger torch.)

Free frozen nuts and bolts.

And even stand up like a laboratory burner.

(This comes in handy when you need both hands free.)

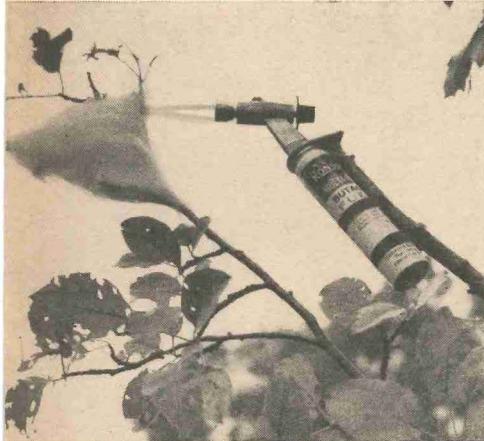
How did Ronson put this new torch together?

We used butane gas, and the

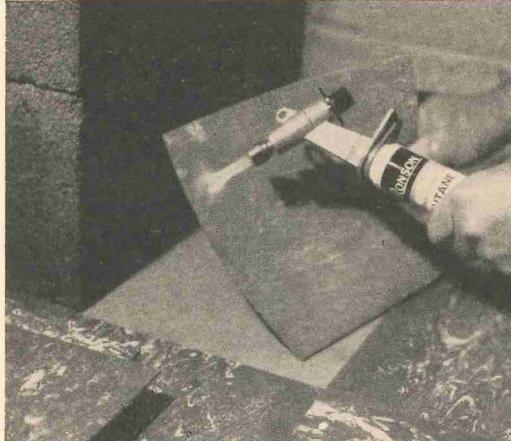
Varaflame Torch. \$4.95.*

(size butane Multi-Fill.)

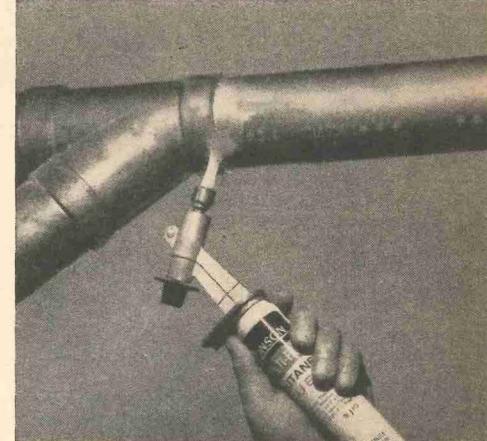
blow torch flame. Lightweight. Compact. Easiest to handle.



BURNS OUT WEEDS
AND CATERPILLAR TENTS.



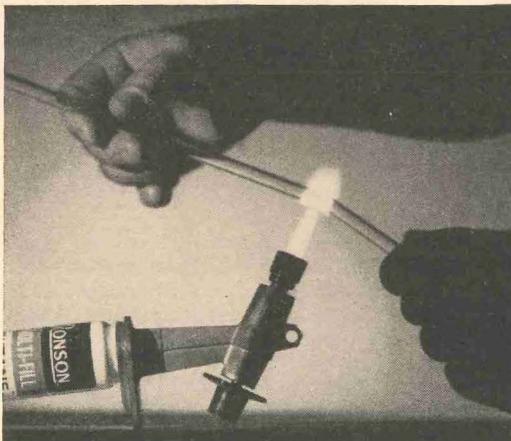
FOR LAYING OR PICKING UP
ASPHALT FLOOR TILES.



SWEATS AND THAWS PIPES.



SOFT-SOLDERS BROKEN TOYS.



FOR BENDING GLASS TUBING AND
OTHER LABORATORY USES..



COMES APART EASILY FOR
STORAGE.

same Ronson Multi-Fill® injector that fuels our gas lighters.

(The Multi-Fill injector lasts for hours, but when it runs dry, you can buy a new one almost anywhere in town.)

And we developed an entirely new kind of torch head.

It snaps onto the Multi-Fill injector. You don't have to be a professional plumber to use it.

A fingertip knob controls the flame precisely. You get the bluest flame possible. The steadiest pinpoint flame. (The steadier and bluer the flame, the more intense the heat, the faster the job gets done.)

And you won't have to take this torch apart to clean it between jobs. It's completely self-

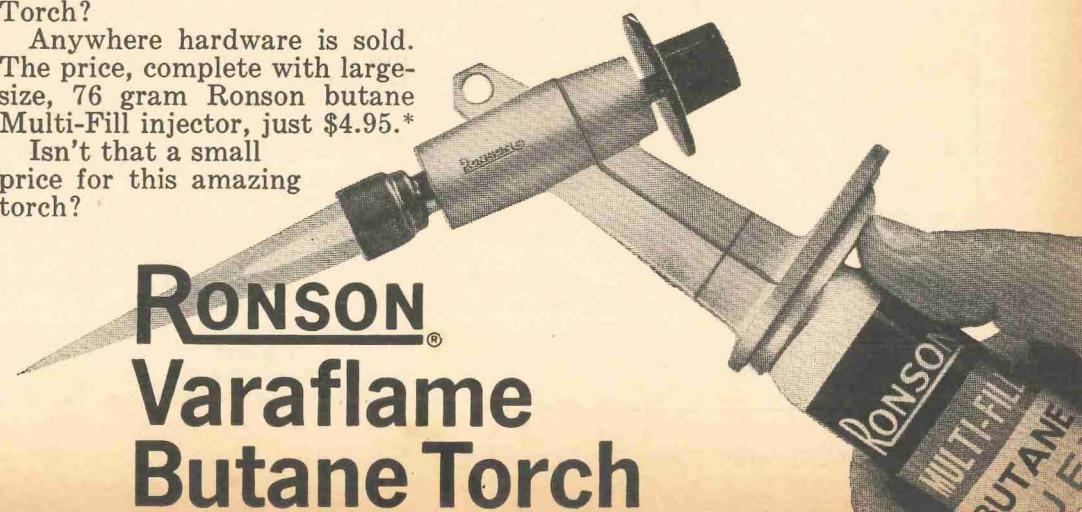
cleaning. **It just won't clog.**

Now.

Where can you get your hands on the new Ronson Varaflame Torch?

Anywhere hardware is sold. The price, complete with large-size, 76 gram Ronson butane Multi-Fill injector, just \$4.95.*

Isn't that a small price for this amazing torch?



RONSON®
Varaflame
Butane Torch

ASSEMBLE YOUR OWN ALL-TRANSISTOR *Schober* ELECTRONIC ORGAN



3 NEW MODELS
Recital \$1500
Consolette II \$850
Spinet \$550

This is the all-new, all-transistor Schober

Recital Model...the most versatile electronic organ available today. Its 32 voices (plus amazing "Library of Stops"), 6 couplers and 5 pitch registers delight professional musicians...make learning easy for beginners. Comparable to ready-built organs selling from \$5000 to \$6000.

The pride and satisfaction of building one of these most pipe-like of electronic organs can now be yours...starting for as low as \$550. The Schober Spinet, only 39½ inches wide, fits into the smallest living room. The new, all-transistor Schober Consolette II is the aristocrat of "home-size" organs...with two full 61-note manuals, 17 pedals, 22 stops and coupler, 3 pitch registers and authentic theatre voicing.

**AND YOU SAVE 50% OR MORE BECAUSE YOU'RE BUYING
DIRECTLY FROM THE MANUFACTURER
AND PAYING ONLY FOR THE PARTS, NOT COSTLY LABOR.**

It's easy to assemble a Schober Organ. No special skills or experience needed. No technical or musical knowledge either. Everything you need is furnished, including the know-how. You supply only simple hand tools and the time.

You can buy the organ section by section...so you needn't spend the whole amount at once.

You can begin playing in an hour, even if you've never played before—with the ingenious Pointer System, available from Schober.

Thousands of men and women—teenagers, too—have already assembled Schober Organs. We're proud to say that many who could afford to buy any organ have chosen Schober because they preferred it musically.

Send for our free Schober Booklet, describing in detail the exciting Schober Organs and optional accessories; it includes a free 7-inch "sampler" record so you can hear before you buy.

THE *Schober* ORGAN CORPORATION

43 West 61st Street, New York, N.Y. 10023

Also available in Canada, Australia, Hong Kong, Mexico, Puerto Rico, and the United Kingdom

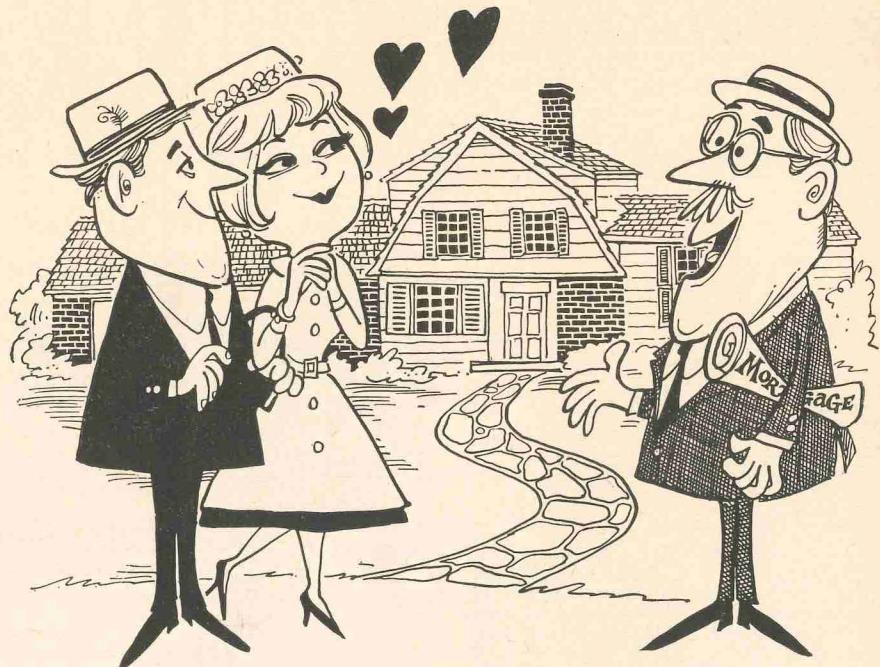
THE SCHOBER ORGAN CORP., DEPT. W-9
43 West 61st Street, New York, N.Y. 10023

- Please send me FREE Schober Booklet and free 7-inch "sampler" record.
- Enclosed find \$2.00 for 10-inch quality LP record of Schober Organ music. (\$2.00 refunded with purchase of first kit.)

Name _____

Address _____

City _____ State _____ Zip No. _____



BUYING A NEW HOME

A qualified attorney and realtor are your best sources of information when buying a new home, but there are some important points you can check yourself. Examine the house during a heavy rain to be sure the land drains well and that the basement does not leak.

The neighborhood may look peaceful now, but how about the future? Most local authorities will have a county master plan that shows which land is scheduled for eventual industrial or municipal use; check to make sure your proposed home will not later be next to a factory or a jet airport.

Be sure the prices of homes in the area are all within the same range. If prices vary widely it could mean that a number of cheaper homes might be built in the neighborhood and lower the value of all the houses.

Also, if there is a house in the neighborhood similar to the one you select and its price is much lower than yours, the seller had better have some good reasons for the difference.

Inside the home are there signs of settling—cracking plaster, out-of-square doors or windows? If the home is brand-new, how much landscaping will be required, and who pays for it, you or the seller?

Before you sign any papers, check public records to determine easements. Expect them for utilities, to permit sewer, gas and telephone lines on your property. If alleys are planned, learn the boundaries so you do not plant valuable mate-

rial that will have to be torn out. Investigate possible assessments—for sidewalks, street improvements, sewers, etc. Records of past assessments in the district will determine what the cost of future levies might be.

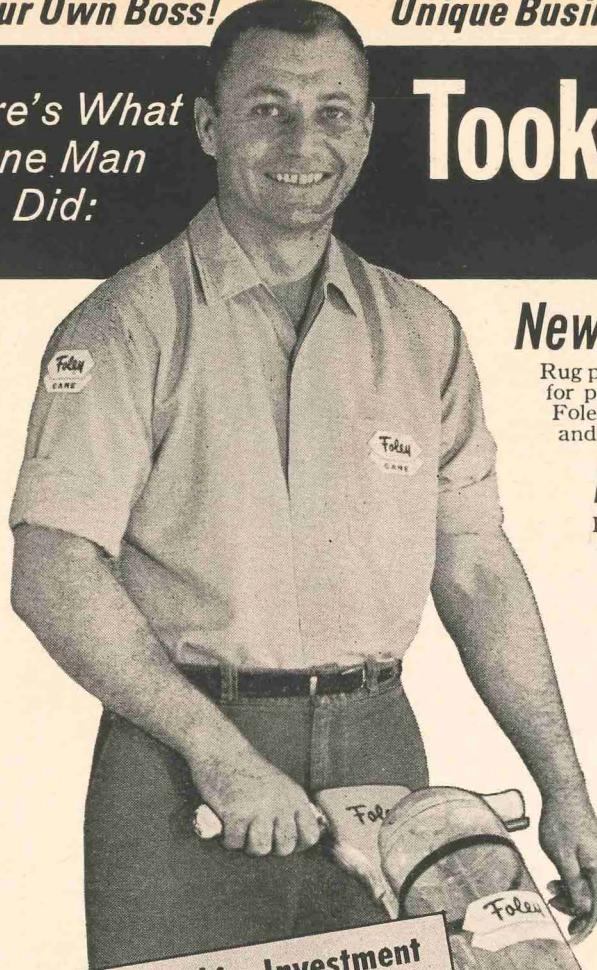
Check building restrictions for the neighborhood. They might prevent you adding on a room in the future, or might permit neighbors to convert their homes for uses other than as a one-family residence.

Be sure to get an accurate tax estimate to help you figure your monthly mortgage payments. Get a clear title; your best bet is a guaranteed title that will protect you against such things as disputed ownership and delinquent tax judgments.

Make sure to get fire and hazard insurance, (homeowner's policy), for your property from the date of sale. Select a policy that provides all the protection you need, but avoid over-insurance. The experts at Traveller's Insurance Companies say you should not insure land values, or the value of excavations or other below-ground items against fire losses. It is important, however, that your insurance coverage is for the full replacement cost of the building.

After you have bought a home be sure to check maintenance instructions and guarantees on all appliances, not forgetting the water heater. Make a calendar to help you schedule routine maintenance service on the furnace, water heater, etc. △△

**Here's What
One Man
Did:**



Took in \$9000 in Year During Sparetime

New Profitable Rug Cleaning Service

Rug production is booming . . . and every new rug is potential income for profitable rug cleaning service. With professional performance Foley-Care equipment you can clean any rug quickly, beautifully and economically—you pocket the profits.

Every Home Can Be a Customer

Everyone wants clean floors—especially mothers with small children. No longer does she wash them herself or want to tolerate the nuisance of sending them out for a week or two. With Foley-Care equipment you go into her home, clean them on the floor, and they're ready with minimum delay.

Extra Income in Offices, Hotels

Commercial business is very lucrative because you get repeat business two or three times a year. More and more places of business use carpeting and they must keep it looking new and colorful to attract their customers. We show you how to get this "extra" business.

Start Sparetime or Fulltime

You are your own boss in a Foley-Care service business. You can do as much business as you desire. No need to quit your present job—start while you're presently employed—and then when business grows you can go full-time. You make this decision! No high pressure sales manager will be pushing you. With Foley-Care you are in business for **YOURSELF**. You are truly your **OWN BOSS**.

You Are in a Professional Service

Foley-Care equipment is the finest made—it's the same equipment that many of the nation's leading hotels use in their 24 hour cleaning schedule. All Foley-Care equipment is unconditionally guaranteed or your money back. Experience has told us that unless you have quality precision-made equipment, you won't be successful—and if you don't succeed—we can't either. Your customers will see this mark of quality on your equipment.

No Expensive Franchise Investment No Big Cash Outlay Needed to Start

You don't pay any monthly franchise fee or exorbitant rental for the privilege of using Foley-Care equipment. And you don't need to be a wealthy man to go into business. This is a remarkable opportunity for an alert aggressive man who is short on capital. You can even pay for the equipment out of your profits the first few months.

Earn \$10 an Hour

Average hourly prices for Foley-Care Rug Cleaning Service is about \$10 an hour. That's higher than average because with Foley-Care professional equipment you clean rugs and carpets faster—and yet you can charge the same prices as ordinary cleaning services. Your customers are better satisfied—and you make more money.

You Are Your Own Boss!

No one tells you when to work! We help you get started and then it's up to you how fast you grow. When you are a Foley-Care man you are in business for yourself. We won't even send a salesman to your home to high pressure you into buying equipment. We don't have to because after you've read our fact filled booklet you can easily make up your own mind.

Free Booklet Tells How

Interestingly written, well illustrated booklet tells you everything about this unique opportunity. If you're a man who is dissatisfied with your present income, write for this free booklet—Remember, no sales man will call.

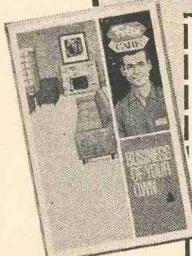
**FOLEY CARE, Dept. 1110-5,
3333 Fifth St. N.E., Mpls., Minn. 55418**

Please send free booklet, "A Business of Your Own."

Name _____

Address _____

City, State, Zip code _____



**3333 Fifth St., N.E.
Minneapolis, Minn.
55418**

ARCO

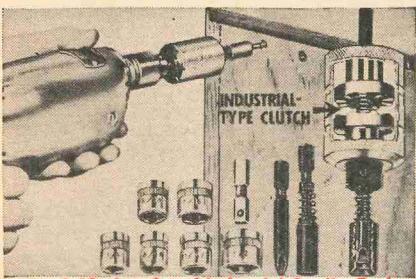
SAVE ON A WHOLE WORKSHOP OF THE LATEST TOOLS!

DRILL ATTACHMENTS

ARCO

AND OTHER TOP TOOLS FOR HOME AND SHOP

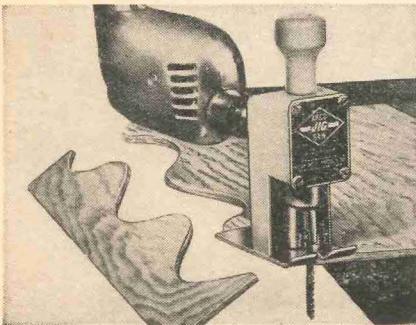
SCREW & NUT DRIVER



A 12-piece Set of Industrial-Quality Tools

The only combination screw & nut driving attachment! Fits every electric drill, drill press. Packs real power in screw, nut & bolt driving because of rugged, non-slip Industrial-type Clutch. Special Bit-Holder prevents bit from slipping off screwheads to damage work or hurt operator's hand. No screwdriver attachments under \$10 has these 2 important features—and with this outfit you get a socket set, too! Includes Flat Bit with Bit-Holder for #6-14 slotted screws, #2 Phillips Bit, 6 hex Socket Wrenches & Socket Wrench Holder with ball-lock. One-Year Guarantee. No. 2800 — List Price \$8.95 — **SPECIAL**

ONLY
\$5.88



"ARCO JIG-SAW"

FITS ANY ELECTRIC DRILL in SECONDS! Simply slip in drill chuck & it's ready to work. CUTS ANY SHAPE, ANY MATERIAL!

This low-priced Jig-Saw has all the speed and capacity of high-priced Jig-Saws. Does 95% of the sawing jobs about the house or workshop! Cuts straight lines, intricate patterns and circles—however large—in wood, wallboard, plastics, metals—even cuts 2x4's! Air Jet blows sawdust away from cutting line. Cuts openings without boring starting hole. 1-Year guarantee. No. 510.

6 Extra Assorted Jig-Saw Blades for cutting wood, plastics, metals. No. 503. **ONLY \$6.95**

"ARCO" Tools are available at your dealer or order direct POSTPAID on 20-day Money Back Guarantee.

MAIL THIS COUPON TODAY!

ARCO TOOLS, INC.
Dept. WB-II, 421 West 203rd St., N. Y. 34, N. Y.

Ship at once on your 20-day Money Back Guarantee:

<input type="checkbox"/> SCREW & NUT DRIVER No. 2800.....	\$ 5.88
<input type="checkbox"/> "ARCO JIG-SAW" No. 510.....	6.95
<input type="checkbox"/> "SIX" "ARCO JIG-SAW" BLADES No. 505..	1.95
<input type="checkbox"/> "ARCO ROTO-RASP" No. 1252.....	1.98
<input type="checkbox"/> ROTO-RASP 3-Piece Set No. 5500.....	3.95
<input type="checkbox"/> "ARCO SCREW-DRILLS" Set of 4 No. 1140	3.69
<input type="checkbox"/> TWIST DRILL SHARPENER No. 220.....	2.29
<input type="checkbox"/> 5-Piece ROTARY FILE SET No. 5700.....	4.50
<input type="checkbox"/> "ARCO ROUTER-DRILL" No. 1160.....	1.50
<input type="checkbox"/> "ARCO DISC-RASP" No. 1255.....	1.50
<input type="checkbox"/> "ARCO BEVEL-CUTTER" No. 10.....	1.98
<input type="checkbox"/> "ARCO RADIUS-CUTTER" No. 16.....	1.49
<input type="checkbox"/> "ARCO RADIUS-CUTTER" No. 17.....	1.49
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<input type="checkbox"/> RADIUS & BEVEL CUTTERS Set of 4 No. 15	5.75
<input type="checkbox"/> "ARCO-SAW" No. 460.....	12.95
<input type="checkbox"/> "ARCO DOWEL CENTERS" No. 584.....	1.29

I enclose Check, M.O. — SHIP POSTPAID.
Orders under \$3.00 — add 35¢

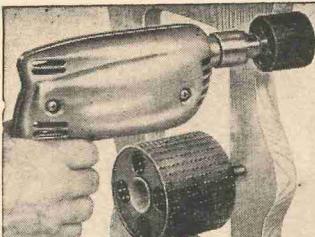
Ship C.O.D. (no orders under \$6)—plus postage.

Name.....

Address.....

City..... Zone..... State.....

"ARCO ROTO-RASP"



SHAPES
CUTS
FORMS
MILLS

Fits any electric drill, drill press. Saves hours of work shaping contours, removing paint, planing, sanding, beveling, model making. Cuts woods, metals, plastics, wallboard, etc. Quality-made in U.S.A. of hardened steel. Never clogs or needs sharpening. $\frac{1}{8}$ " diameter with $\frac{1}{4}$ " shank. Terrific Value. No. 1252.

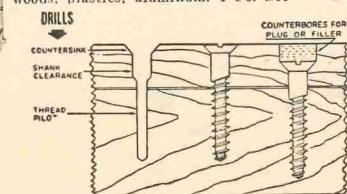
ONLY
\$1.98
SAVE! Set of 3 Roto-Rasps ($1\frac{1}{8}$ " dia. drum above plus $\frac{3}{4}$ " & $\frac{1}{4}$ " dia. drums). No. 5500..... \$3.95

"ARCO Screw-Drills"

Adjusts for ANY Screw Length
SET of 4 SIZES — No. 6, 8, 10, 12
FOR EVERY WOODSCREW
Drills Hole, Countersinks,
Countersinks in 1 Operation

Set of 4 drills for all #6-8-10-12 woodscrews—flat, round, oval heads. Use with hand or elec. drills, drill press on woods, plastics, aluminum. 4-Pc. Set

ONLY
\$3.69

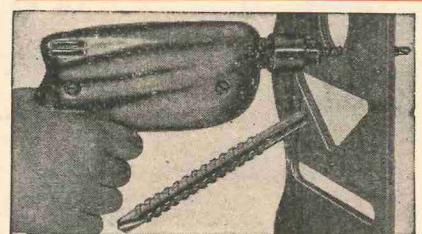


TWIST DRILL SHARPENER

Fits ANY Electric Drill. Includes 3" Aluminum Oxide Grinding Wheel with $\frac{1}{4}$ " shank and Guard. Twist Drill Holder for sharpening any bit up to $\frac{1}{2}$ " diameter. Tool Rest for sharpening chisels, knives, scissors, plane blades, etc. No. 220. **\$2.29**

5-PIECE ROTARY FILE SET

SPECIAL VALUE!
Assortment of different shapes. Large sizes with $\frac{1}{4}$ " shanks to fit ANY electric drill, drill-press or flexible shaft. Ideal for tool and pattern making, cutting, shaping, finishing, etc. Cuts steel, wood, plastics, wallboard, etc. No. 5700. **\$4.50**



"ARCO ROUTER-DRILL"

SAWS • DRILLS • ROUTS • FILES
Fits any Electric Drill. Cuts own starting hole and any shape in any direction tool is moved. Cuts plywood, lumber, formica, non-ferrous metals, sheet steel. Quality-made in U.S.A. of hardened steel with sharp milled cutting edges. No. 1160.

ONLY
\$15.00

"ARCO DISC-RASP"



NEW!
SANDS
PLANES
REMOVES
PAINT

Most efficient Rasp ever made! Fits any Electric Drill. 5" Dia. bottom surface has 400 sharp teeth for smooth finishes. Cuts wood, wallboard, plastics. Quality-made in U.S.A. of hardened tool steel. Never clogs or needs sharpening. Outlasts hundreds of sanding discs! Arbor has $\frac{3}{8}$ " shank. No. 1255—a "Best Buy" at.....

\$1.50

ARCO EXCLUSIVE!

EVERY ELECTRIC DRILL A

← BEVEL-CUTTER &
RADIUS-CUTTER →



NOW FOR THE FIRST TIME you can do corner beveling and corner rounding with ANY ELECTRIC DRILL or drill press. Simply slip Arco Adjustable Bevel-Cutter or Radius-Cutter in drill chuck and it's ready to work! Special Dual Guides assure accurate cuts along entire length and width of workpiece. Cuts wood, plastics, soft metals. Quality made in U.S.A. of hardened steel.

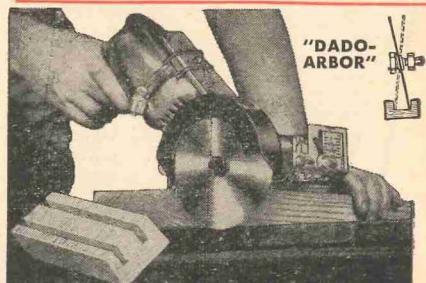
Avail. in
3 sizes



Makes Fast, Clean, Accurate Cuts

No. 10 Adjustable Bevel-Cutter, cuts 45° bevels from $1\frac{3}{32}$ " to $5\frac{1}{16}$ " wide..... \$1.98
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"DADO-ARBOR"

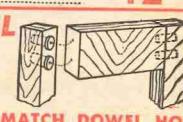
"ARCO-SAW" WITH FAMOUS "DADO-ARBOR"
The ONLY Portable Saw that CUTS GROOVES!

CUTS 2x4's, ALL ANGLES! Fits ANY $\frac{1}{4}$ " Drill in Seconds with new "Slide-Lock" Build anything from a bookcase to a bungalow with this powerful saw attachment. Rips and crosscuts up to 2" board in one easy cut. Exclusive "Dado-Arbor" swivel sawblade to cut grooves up to $\frac{1}{2}$ " wide x 1" deep in one cut! Not even a \$100 portable saw has a dado cutter! Has graduated gauges for ripping, depth and angle cuts. Can be used with one hand. Strong steel gear drive and self-lubricating lifetime bearings assure long trouble-free use. Includes 5" Combination Blade. 1-Year Factory Guarantee. No. 460. **\$12.95**

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Set of 8 Dowel Centers, 2 each: $\frac{1}{8}$ ", $\frac{3}{16}$ ", $\frac{5}{16}$ ", $\frac{1}{4}$ ". Holes are drilled in 1 of 2 pieces of wood to be joined and correct size Centers inserted. Other piece of wood is pressed against Centers & tapped. Resulting punch marks are exact centers for drilling opposite dowel holes. Set of 8. No. 584.

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\$1.29



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Fast, Accurate



ARCO TOOLS, INC. Dept. WB-11, 421 West 203rd St., New York 34, New York

IN THE NEXT ISSUE . . .

Garage-to-Playroom Conversion

The quickest, easiest, as well the least expensive way to add a room to your home is to have a contractor put up the shell and for you to finish the inside. You can work inside the structure all year around, protected from the weather. You can further lower costs if you use a shell that already exists; your attached garage.

This article describes step-by-step how a typical garage was modified to become living space. Walls are covered with paneling, the ceiling with acoustical tile and the floor with an attractive material. If you need more living space in your home, and have an attached garage, this story will tell you how to make it into a beautiful room.

Child's Table and Chair is set of furniture designed especially for our readers. The two units are simple to construct and are designed to be sturdy enough to stand up to the use and abuse that youngsters give their furniture. The chair design can be repeated as many times as the builder wishes. Best to figure on at least two chairs, and four would be better in case the young host or hostess has friends in for a party.

Wood Planes — Why And How shows and describes the various forms this basic tool takes. In its simplest form a plane is a wood chisel clamped at an angle in a block. Originally the block was wood, now usually is steel. This article tells how to sharpen and adjust a plane iron to get the most out of this useful tool.

Folding Pontoon Boat is a unique craft that is practically a floating patio complete with roof. The craft is powered by an outboard motor, controlled from a built-in pilot's seat and control console. Most practical of all, this family-type boat folds to a narrow package about 4 ft. wide that readily fits on an equally narrow trailer. The roof and framing are stowed inside the folded craft. The story will be presented in three parts; a builder can have the boat ready for spring.

Sound Conditioning tells how any homeowner can make his home a quieter place. Described is how to modify existing walls to prevent sounds from traveling from one room to the next. Also explained is how to reduce sounds within a room. Every home owner will want to read this most informative article.



A Zenith Hearing Aid can make you cry.

How long since you've had yourself a good, old-fashioned cry?

You know. With the kind of tears a great movie, music, or a certain someone's voice can turn on.

There's a good chance you can hear these sounds again. Visit your Zenith Hearing Aid Dealer.

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He sells Zenith. And a Zenith can make you cry.
In case you haven't heard.

Please send me your booklet describing your behind-the-ear Zenith "Living Sound" Arcadia Hearing Aid.

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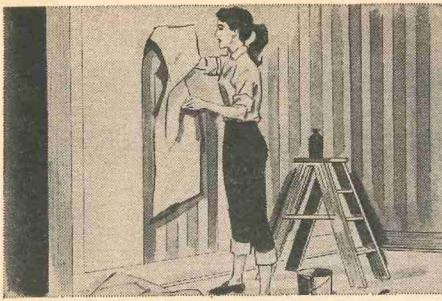
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Zenith Radio Corporation, Dept. 87Y
6501 West Grand Avenue, Chicago, Illinois 60635





New Nel-King Wallpaper Remover

No expensive steaming, no tiresome scraping. Mix 2 ozs. of liquid concentrate in a gallon of water. Apply with rag, brush, sponge or spray. Penetrates paper, loosens adhesive, paper "skins off" smoothly. Works on painted-over wallpaper, too. Safe as water. Pint bottle, enough for 3 average rooms, \$2.98 + 25c postage. Guaranteed. Money back if returned postpaid within 30 days. Nel-King Products, Dept. WB-115K, 811 Wyandotte, Kansas City, Mo. 64105.

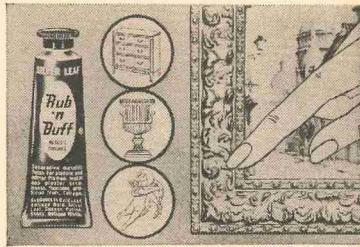


Septic Tank Trouble?

Homeowners — This company has a non-poisonous bacterial compound that works to keep septic tank and cesspool clean, break up solids and grease, prevent overflow, back-up, odors. Can save costly pumping or digging. Simply mix dry powder in water and flush down toilet. Money back guarantee of satisfaction. Six months' supply, \$3.35, or full year's supply, only \$6.00, postpaid. Northel Distributors, WM-11, P. O. Box 1103, Minneapolis, Minnesota 55440.

Shoppers'

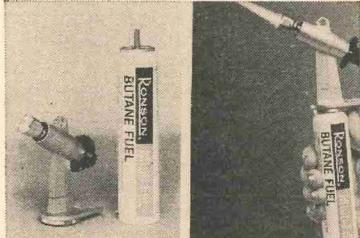
METALLIC FINISH for decorating and antiquing is applied with finger, soft cloth or facial tissue, dries in seconds, can be buffed to a luster. Colors are gold leaf, silver leaf, copper, antique gold, antique white, Chinese red, ebony and patina. The last color creates the rich greenish-blue of old copper. Finish can be used on wood, plaster, metal, etc. Rub 'n Buff is available wherever paints are sold. Made by American Art Clay Co., Indianapolis, Ind.



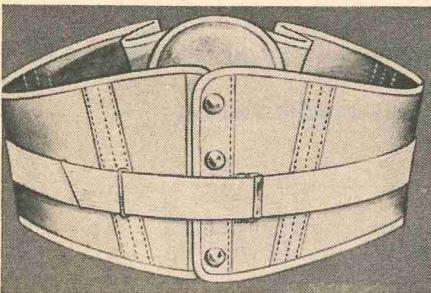
ALUMINUM-FOIL TAPE with pressure-sensitive adhesive can be used for repairing rain gutters, air ducts and aluminum siding. Tape also is described as ideal back-up material for auto-body repairs made with plastic filler. Tape is 2 in. wide, roll is 108 in. long. Scotch brand Metal Repair Tape, (No. 423), has suggested list price of \$1.69 per roll. For more information write to: Dept. L5-342, 3M Company, 2501 Hudson Road, St. Paul, Minn. 55119.



COMPACT BUTANE TORCH weighs only 12 oz., can be carried in pocket or tool box. Heat-insulated control dial permits adjusting flame from tiny pencil point to blow-torch size. Because of its small size torch can be used in locations where larger units would not fit. Tank of fuel will last many hours, is easily replaced. Ronson Varaflame Butane Torch is available at hardware stores, hobby shops, department, drug and auto stores for \$4.95.



TWICE HOLDING POWER of regular cement is claim for this product that can be mixed with water to pouring consistency for setting anchor bolts, porch railings, etc., and to putty-like texture for patching vertical surfaces. Cement will set firm in 15 min., an anchored bolt will be solidly imbedded in 1 hr. in 1 and 5-lb. containers at building-supply and hardware dealers. Rockite is made by Hartline Products Co., 2186 Noble Rd., Cleveland, Ohio 44112.



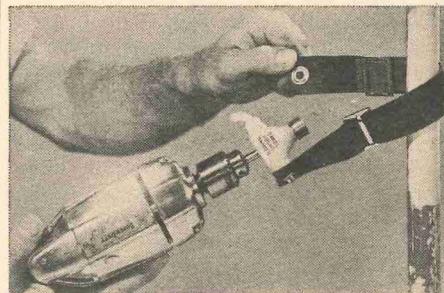
Instant Backache Relief

Patented Pi Peer Back-Easer® relieves back pain, slims waist, improves posture, helps relax tensed nerves. Strong, form-fitting, washable. Snap front. Encircling pull straps for easy adjustment and instant relief. Large foam rubber pad holds, massages back. Prescribed by doctors. No fitting. Send hip measurement. Only \$5.95 plus 25c postage. Piper Brace Co., Dept. WB-115B, 811 Wyandotte, Kansas City, Mo. 64105.



End Bed Wetting Problems

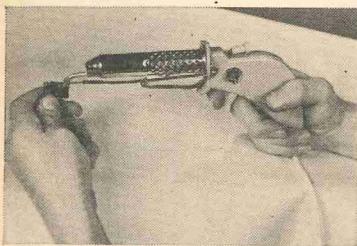
For infants, children, adults. Contour design and exclusive cuff feature of PiPeer Dri-Pants give better retention, chafe-free comfort, complete incontinency protection. Waterproof outer lining, interior of super-soft flannel. Inside area double-padded with quilted cotton. Child & adult waist sizes: 18-24, \$3.95; 26-38, \$4.95; 40-44, \$5.95. Other sizes available on special order, \$1.00 extra. Piper Brace Co., Dept. WB-115X, 811 Wyandotte, Kansas City, Mo. 64105.



For The Refinisher

Sands chair rungs, dowels, round objects! Just attach strip of sandpaper to the Barco-Flexible Belt, connect to $\frac{1}{4}$ " electric drill and sand any straight or tapered round object up to $2\frac{1}{2}$ " diameter. Back and forth action (like shining shoes) is ideal for finishing! Built to give years of trouble-free service. Pays for itself first time it is used. Wonderful gift for craftsman! Satisfaction guaranteed! Each, postpaid . . . \$3.95. P. L. Bahr Co., Box 246, Vienna 3, Ohio.

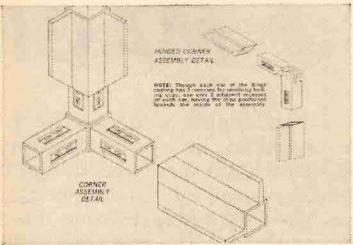
Showcase



SQUEEZE ON TRIGGER of this gun-shape soldering iron and solder is fed directly to tip through tube, permitting one-hand working. Ideal for jobs where one hand must be used to position work, and where removing iron to add more solder could create "cold" joint. Complete with reel of solder, galvanized stand, two replaceable points, ppd. 70-watt, 115 V., \$17.95, 70-watt, 220 V., \$19.95. Porta-Power Michigan, 1120 N. Ball St., Owosso, Mich.



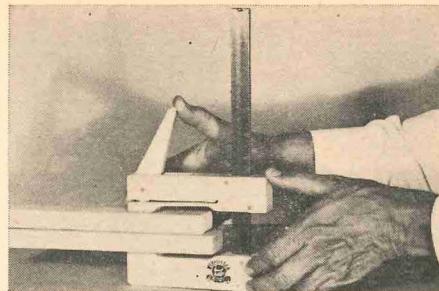
NEW AEROSOL FIRE EXTINGUISHER uses non-toxic carbon dioxide and freon 11 to smother common types of fire without leaving a residue. Because material vanishes following application, most food can be consumed without harm after extinguisher has been used on food fire. Effective on grease, oil and electrical fires, "Flame-Out CO₂" is excellent for use in the kitchen and home shop. Lynco, Inc., 2041 S. W. 58th Ave., Portland, Ore.



SELF-LOCKING ALUMINUM CORNER castings make it possible to assemble frames from square aluminum extrusions. Ideal for ultra-modern look in desks, furniture bases, racks, shelves, etc. Extrusions are $\frac{3}{4}$ in. square in lengths to 12 ft. Corner castings have 3 or 4 ears for right-angle assemblies, and there is hinged unit for slanted configurations. For catalog and prices: Amco Engineering, 7333 W. Ainslie St., Chicago, Ill. 60656.

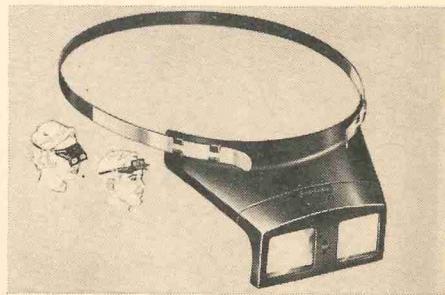


FREQUENTLY REQUESTED from our Research Dept. is information on cleaning masonry. Here is a product that simply is mixed with water, then applied with a stiff-bristled brush to remove grime and salt deposits. The powder contains cleaning ingredients, rust inhibitors and wetting agents, is easily stored and is safer to handle than other types of cleaner. Sono-Kleen is available at building-supply dealers at \$1 per box.



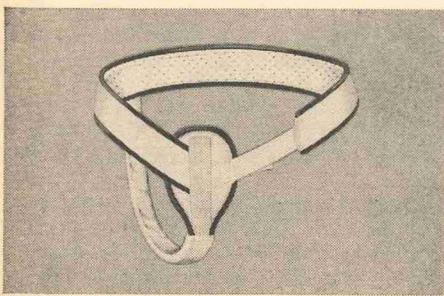
Quick Grip Klemmsia Clamp

With a Zip Flip! It grips your work with even pressure for a lasting bond. A new West Germany import, "Klemmsia" Clamp solves woodwork gluing problems. Proven in European cabinet shops and piano works. Made of select beech, tempered steel and cork-lined jaws; no pads needed. Jaw-opening sizes $7\frac{3}{4}$ to 23 in. maximum. Priced \$2.95 to \$4.95. Full particulars from The Holly House, Dept. K17, P. O. Box 3182, Albuquerque, New Mexico 87110.



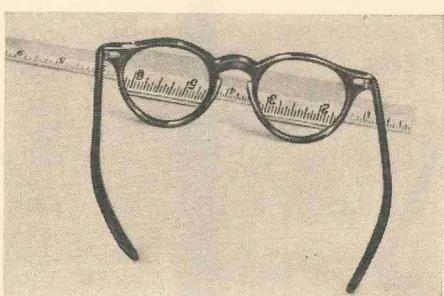
Nel-King Magna-Fi

Makes close work, fine print look big! Ideal for craftsmen, hobbyists, homemakers. Lets you work faster, more accurately, leaves hands free. Exclusive: hinged lens swings up out of way when not in use. Polished prismatic lenses. Only \$7.95 with removable $2\frac{1}{2}$ diopter lenses. More powerful extra 3 diopter lens also available at \$2.98 additional. Can even be worn with bifocals. Adjustable head size. Nel-King, Dept. WB-115MF, 811 Wyandotte, Kansas City, Mo.



Goodbye Rupture Misery

Patented Comfo-Truss weighs just $3\frac{1}{2}$ ozs., yet holds reducible inguinal hernia as gently and surely as your hand. Body belt of soft, cloth-covered foam rubber. No laces, no snaps—quick one-buckle adjustment. Foam rubber groin pad. Washable. \$4.98 right or left side, \$6.98 double plus 25c postage. Be sure to send measurement around lowest part of abdomen. Kinlen Company, Dept. WB-115C, 809 Wyandotte Street, Kansas City, Missouri 64105.



See Clearer Instantly

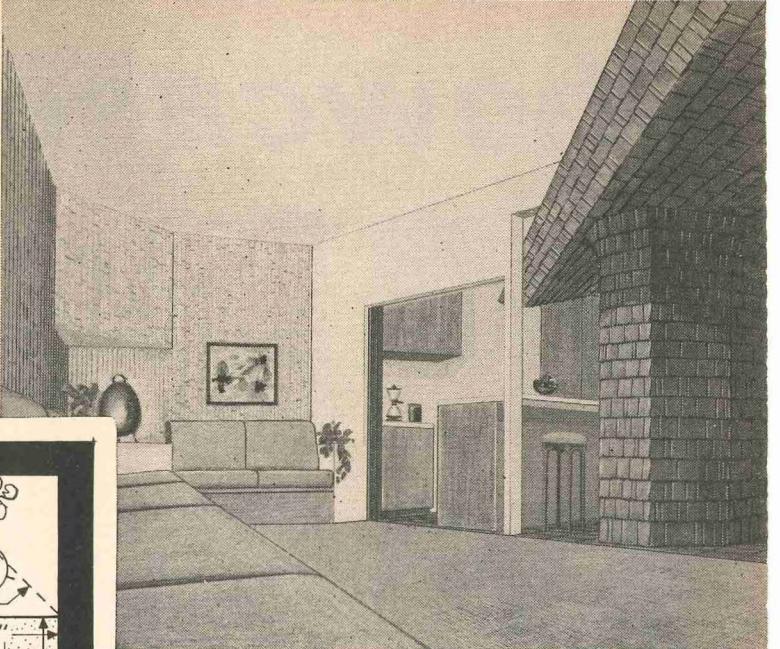
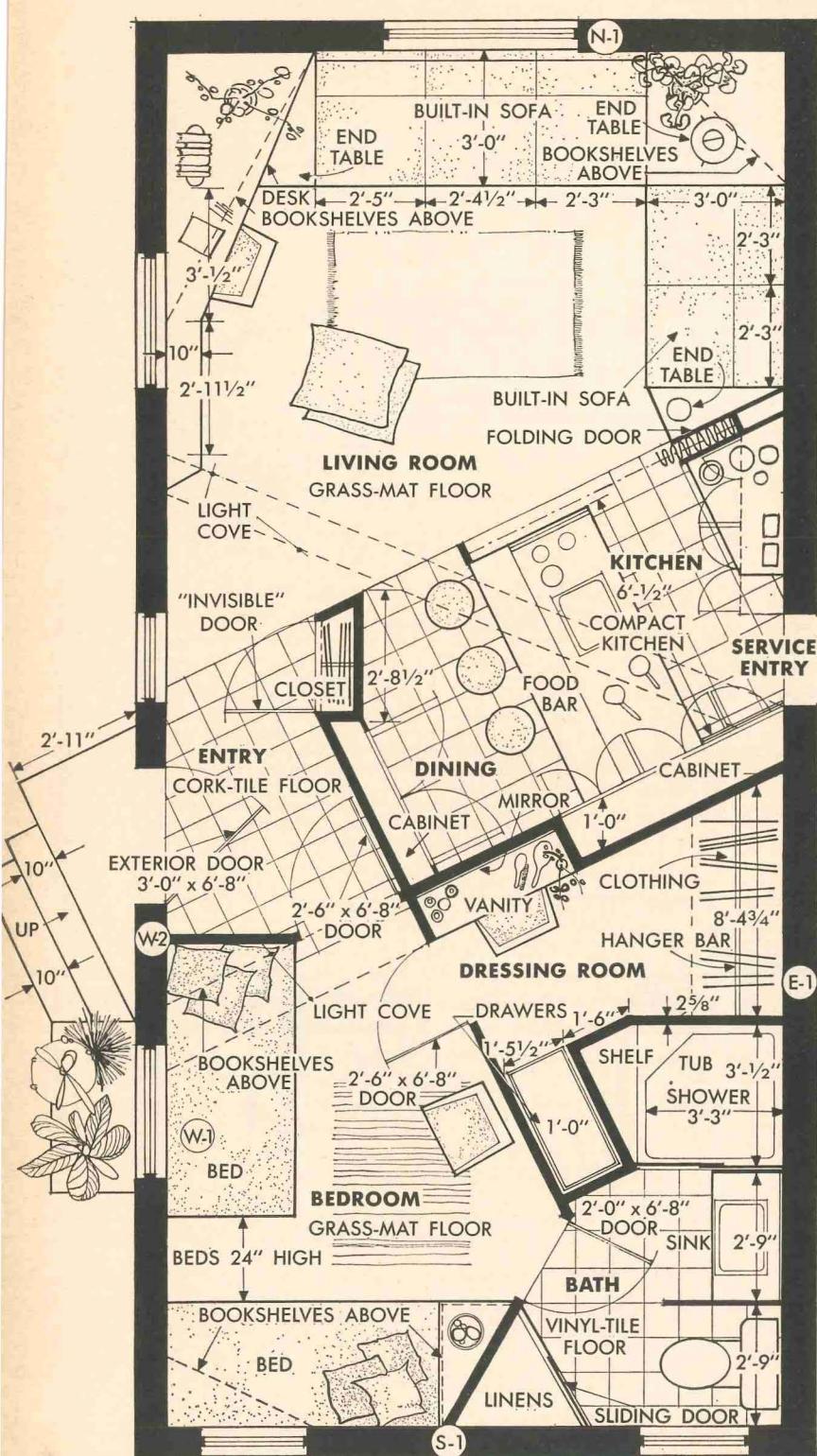
These magnifying reading glasses with high-quality, plano-convex lenses magnify fine print, make it easier to do close, precision work. Stylish smoke-color frames, metal hinges for long wear. Especially helpful for folks over 40 without eye disease or astigmatism. Money-back guarantee if returned postpaid within 30 days. An outstanding value at \$2.98. State age, sex. Add 25c postage. Nel-King Products, Dept. WB-115G, 811 Wyandotte, Kansas City, Mo. 64105.



Smoother Wood Repairing

The natural beauty of wood demands the best patching material available to enhance its appearance. Wood Patch is made from wood for wood. It completely fills cracks, holes, nicks, dents and all surface defects—uniformly accepts all types of stains and finishes. No shrinkage—dries fast for quick finishing. $\frac{1}{4}$ pints 49¢, pints \$1.19, prepaid. Choice of 8 colors. Available at your dealer or write Forest Interiors Corp., Dept. WB11, P.O. Box 1848, Seattle, Washington 98111.

Theodore Seligson, Architect



Modernizing MAGIC

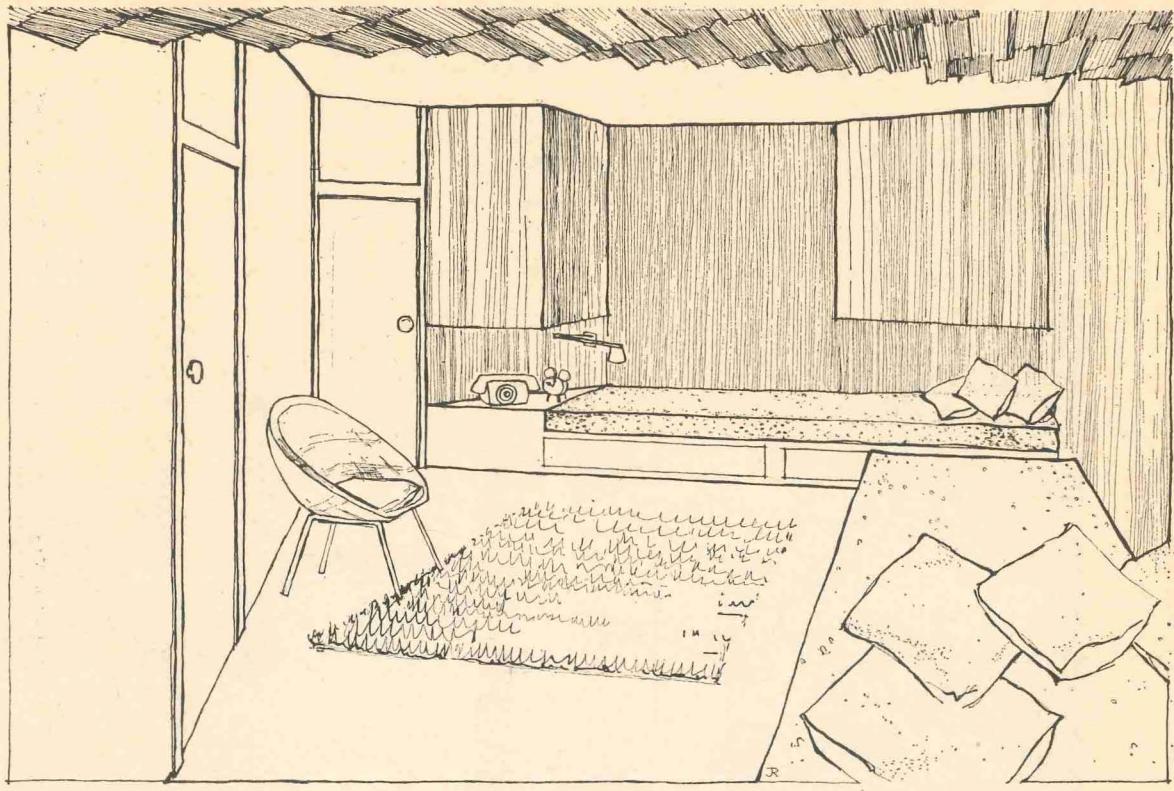
Part III

Either two twin beds or one double bed can be fitted in the very compact bedroom of our "idea apartment." The twin beds shown do provide more floor space and are preferred because of the very limited living area in the little room. The end table next to the linen closet is designed to fit against the built-in twin bed, and the bookshelves above both beds are arranged for twin beds. For economy, the beds are simply boxes built of $\frac{3}{4}$ -in. plywood, fitted with cleats to support box springs and mattresses. The shallow space under the beds is utilized by making drawers that are fitted with ball casters to roll on the floor. Off-season blankets can be stored in the drawers. The boxes are built first, dry-assembled, then taken apart and the drawer fronts are cut from the sides of the boxes. This assures the drawer fronts of fitting perfectly. The bed-boxes now are assembled with glue and screws and fitted in place. The drawers are made, then fitted with casters, which must be recessed so the drawer is barely above the floor, then installed under the bed.

The dressing room actually is a large closet, clothes being hung on a rod on one wall. A shelf above the rod provides additional storage. Drawers are fitted floor-to-ceiling opposite the vanity for the storage of clothes. The upper drawers are too high for everyday use, but off-season or seldom-used items can be stored in them.

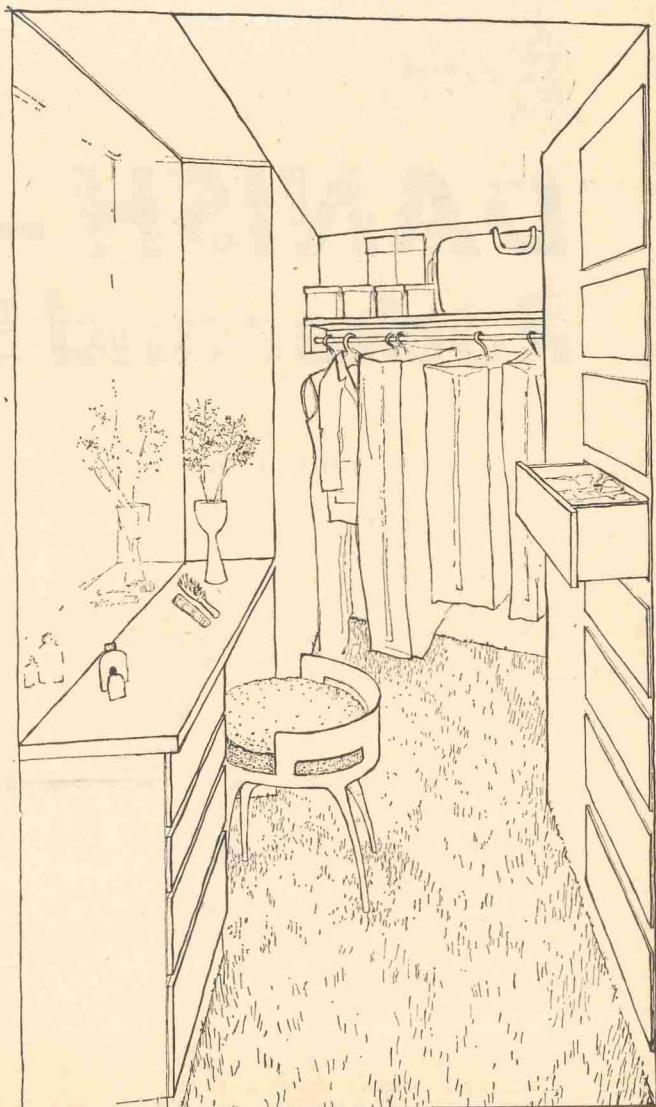
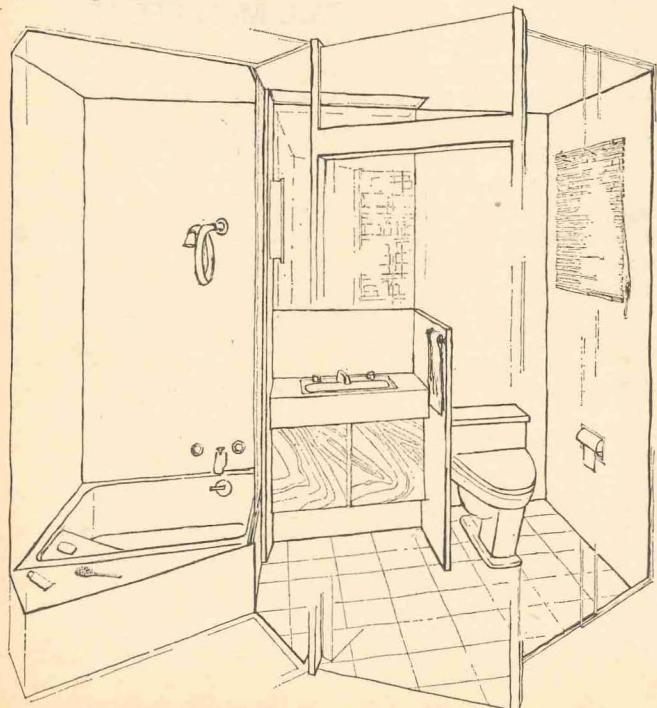
The vanity also is a home-built unit, and is of a size and shape to suit the builder. There must be leg room for milady when she is making up her face. The large mirror on the wall is illuminated by a recessed light in the lowered ceiling. It is covered with a sheet of translucent plastic to create shadow-free illumination. Note also that the floor is covered with an inexpensive carpeting. This will assure comfort and warmth on chilly mornings.

The bathroom is a marvel of space utilization, the tub, called a "Restal Receptor Bath" is a product of American, and can be obtained from plumbing-supply houses. Note also that the shower has a flexible neck, which permits better control, even convenient shampooing for the lady of the house. A seat is located in one corner of the tub and there is a shelf on one side.



The lavatory has a mirror above it, and the doors below are covered in a hardwood veneer to provide an accent in the stark-white interior of the room. The walls and ceiling are covered with a waterproof paneling, such as Marlite, while the floor has white vinyl tile. The existing window in this instance is covered with a bamboo blind to carry the "natural" motif from the bedroom. The window also could be fitted with a panel of translucent plastic for privacy and light.

We have not been specific in dimensions or materials in this series of articles, as it has been meant simply to generate ideas. For more specific details write our Research Department. Keep letters short, questions brief, so specific answers can be given to your particular problems. △ △





DANISH - INSPIRED Rocker and Straight Chair

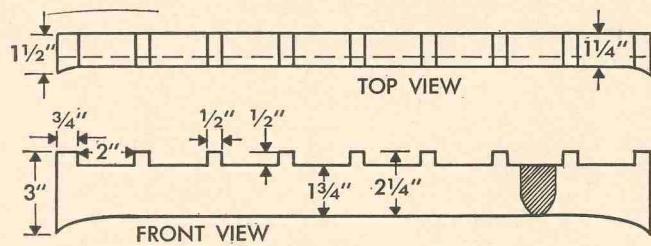
PHIL McCAFFERTY

Crafting this high-backed, Danish-inspired rocker and the matching low-backed occasional chair requires a considerable amount of time, but the result is a pair of exquisitely-shaped chairs that make a stunning addition to any modern home. The design of the chairs is such, as can be noted in the plans, that either chair can be built individually, and you can use either back height on either chair.

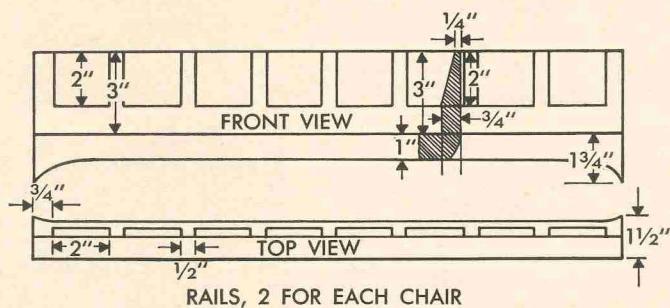
The best tool for cutting the various parts of the chairs is a band saw, but a husky saber saw will suffice if you are experienced in its use. A saber saw fitted in a table would be easiest to use, as it more closely duplicates the action of a band saw.

Cushion construction is straightforward; foam-rubber cushions 3 in. thick are covered with the fabric of your choice. If your wife is handy with the sewing machine she can be making the covers for the cushions while you are building the chairs. Some upholstery fabrics are heavier than some home sewing machines can handle, and you may want an upholstery shop to make the cushion covers for you.

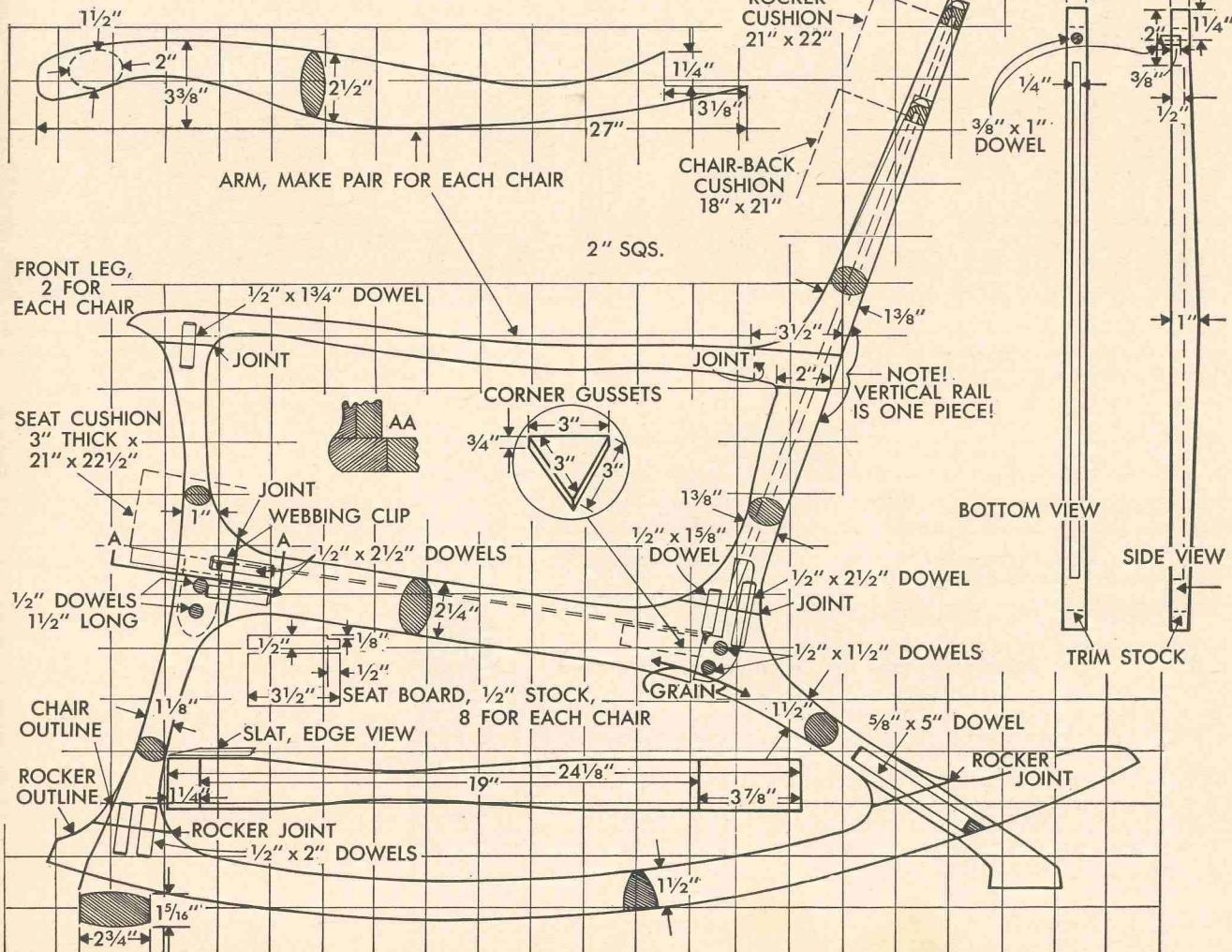
The sides and arms of the chairs are designed to be made from 1-5/16 or 1-3/8-in. walnut or other hardwood. Material of this thickness may not be available in your locality, but can be ordered from several companies who advertise in WORKBENCH, these concerns specializing in selling hardwoods and supplies to home craftsmen. About 15 lineal feet of the thick lumber will be required for the straight chair, about 22 ft. for the rocker. In addition to the thick stock, you will need 3/4-in. material for the top strips, for laminating the front and rear rails, (laminated to achieve thickness and strength), and for the reinforcing gussets that go in the corners of the seat frame. A small amount of 1/2-in. walnut is required for the short seat boards. The back slats require 1/4-in. walnut. Comfortable seating is assured with rubber-fabric belting. You will need about 12 ft. of this material, called "Dunlap Rubber Webbing", for each chair. Most upholstery shops carry this material or can order it for you if they do not stock it. Each chair also will require 16 Dunlap webbing clips. These clips clamp onto the ends of the webbing and are screwed to the chair frame. The webbing strips are cut about 1 1/2 in. short, then are installed under tension to keep them taut under the cushion.



FRONT RAIL, 1 FOR EACH CHAIR, LAMINATED FROM $\frac{3}{4}$ " STOCK



RAILS, 2 FOR EACH CHAIR



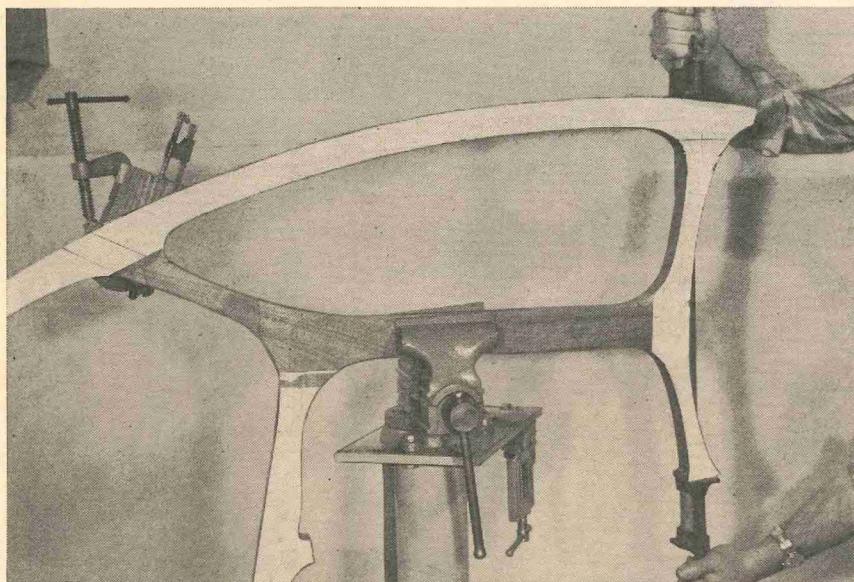
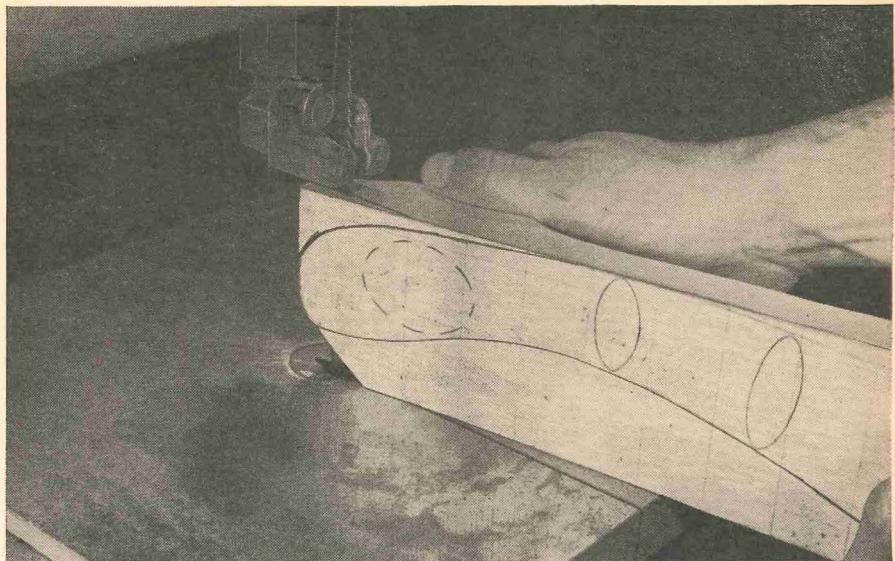
Start construction by making patterns from the squared drawings. You can trace the shapes on the wood, or cut duplicate patterns and cement them directly to the wood with a thin coat of contact adhesive, Fig. 1. Saw out the individual pieces, taking particular care to keep the joint surfaces square. Note that the arms and front and rear rails are profiled in two directions, drawing and Fig. 1.

Start assembly of the rocker by doweling the front legs and vertical rails to the side rails. Dowel the front end of the rocker to the front leg. Note that the rear end of the rocker cannot be doweled until after the joint has been glued, Figs. 2 and 3. Assembly for the straight chair is the same, except for the rockers. The next step is to glue and dowel the front and rear rails

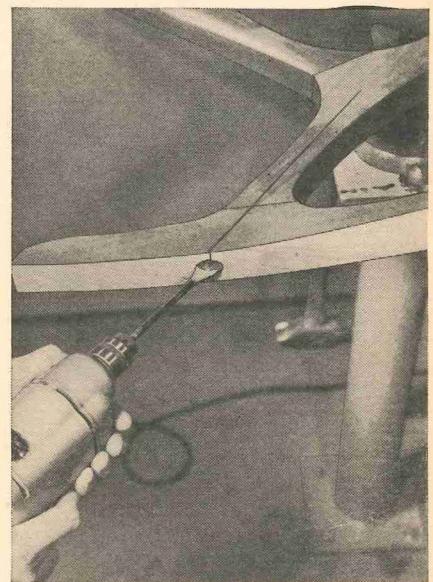
1. Fastest method is to glue duplicate patterns directly to stock. Band saw is best, but husky saber saw will do.

to one assembled side. After the glue is dry, glue and dowel the other side assembly to the rails. Do not attempt to assemble both side sub-assemblies to the front and rear rails at the same time.

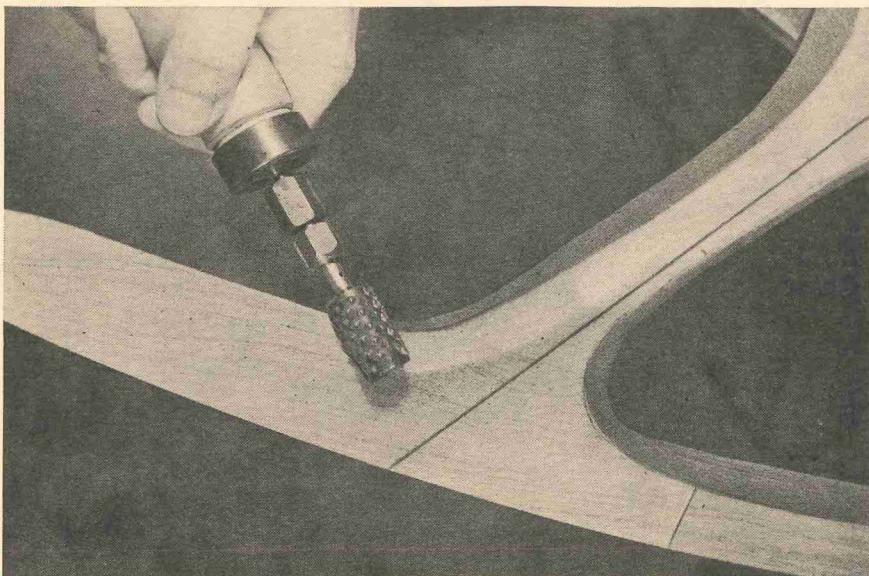
You will probably find it easiest to rough-shape the rounded contours of the parts prior to gluing together with the front and rear rails, but this is a matter of choice. I found it handy to remove a majority of the stock with a rotary rasp, Fig. 4. Rough-shape the arms and glue and dowel in place. Note that the joint at the rear is not doweled. Glue and dowel the top



2. Glue up each side of each chair as a complete unit before gluing in the front and rear rails. You will need bar clamps, or clamp fixtures for pipe to hold the assembly after it is glued. Note angle block under clamp.



3. After glue joint at the rear end of the rocker has been glued, reinforce it by drilling and inserting dowel.



strips in place. Trim the ends that were left long, as indicated in the drawing. All shaping except for the final sanding of the chairs should be done before installing the corner gussets, Fig. 5.

Shaping of the flowing contours goes quickly with a quality half-round cabinetmaker's rasp fitted with a good handle. Smooth rough spots with a scraper and a coarse half-round file. Follow this with sanding, using coarse, medium and fine grades of paper. Finish with 4/0 steel wool. Pre-sand the back slats and short seat boards and install them, Figs. 6 and 7.

The rubber webbing is cut about

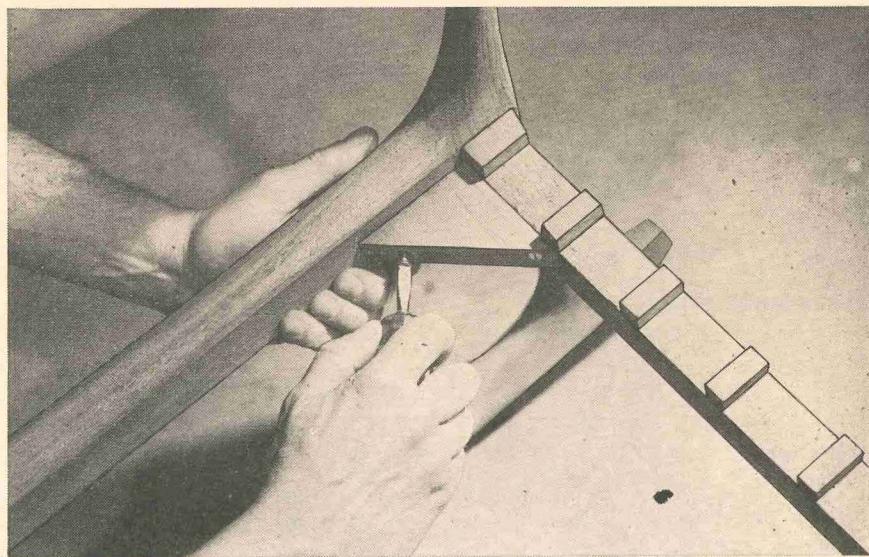
4. Rotary rasp is quickest way to rough-shape components of chair. Follow with files, sandpaper, finally steel wool.

5. Four gussets are required for each chair, fitting in corners to strengthen them. They are glued and screwed.

1½ in. shorter than required and stretched into place to assure tautness. The webbing clips first are squeezed onto the ends of the webbing by using a vise. Countersink a screw hole in the center of each clip and fasten one end of each strap to the chair frame with a No. 8 x ¾ in. flathead wood screw. Predrill the holes in the opposite end of the seat and stretch the strip into place, using a punch or nailset in the hole. Clamp the clip to the rail, remove the punch and fasten with a screw, Fig. 8.

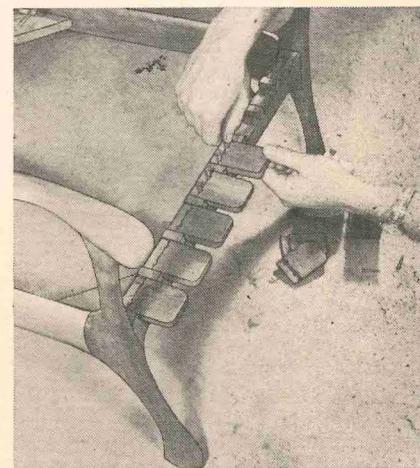
Finish the chair, or chairs, with one of the several good Danish-oil products now available. If your local paint dealers do not have it, several of our advertisers carry it and will sell it mail order. You may wish to remove the seat webbing before applying the finish. If you do, number the strips so they can be replaced in the same position and will not require refitting.

There are several tips that will help in enlarging the squared drawings. After locating the various points in the squares you can join the points with a smooth graceful line by using a strip of thin wood or sheet metal to guide your pencil. Double-check the sizes and shapes of your patterns by placing the full-size patterns on the floor and matching them up. If you find incorrect angles or dimensions,

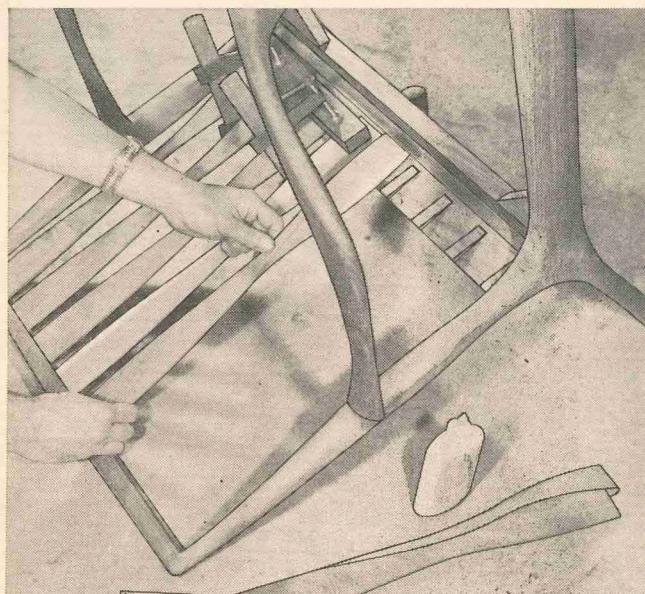


change them on the paper and avoid wasting expensive hardwood. Remember that the arms are made as pairs; there must be a left and a right. The back slats are either 20¼ in. or 24½ in., depending on whether they are for the long or short back. If the rear rail with its angled slots presents a problem, simply rip the strip at the correct angle and ignore the slots. You then can fit angled blocks, cut from a strip ripped to shape, between the spaced slots. Glue and screw the blocks to the rail.

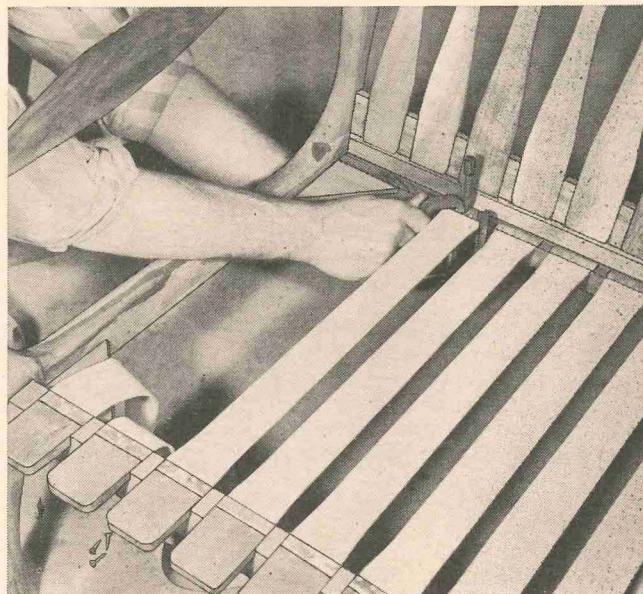
For those craftsmen who prefer to work with full-size drawings we have available a full-size blueprint of the chairs. Price of the print is \$4. Send check or money order to WORKBENCH, Danish Chairs, Dept. 1069, 543 Westport Road, Kansas City, Mo. 64111. △ △



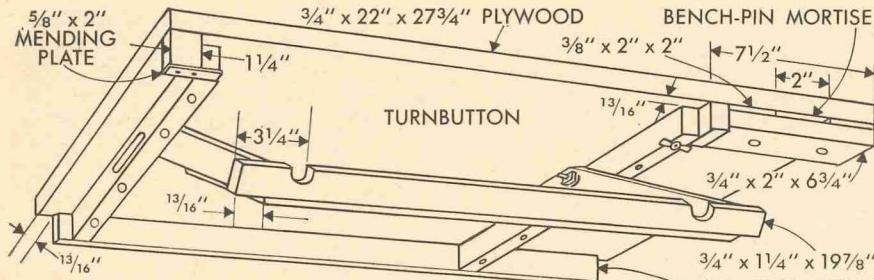
6. Rabbeted short seat boards are fastened to the front rail. Rabbets are to accept clips that hold rubber webbing.



7. Top ends of back slats are glued in dado on underside of top rail, lower ends fit into notches cut in lower rear rail.



8. Punch and clamps are used to stretch elastic webbing into place. Webbing is cut short so it will be "pretensioned."



ELECTRONICS BENCH

CATCH-TRAY DETAIL

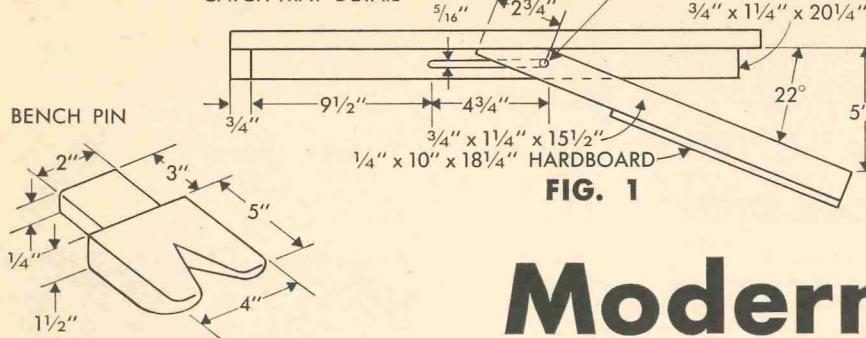


FIG. 1



Modern Workbench

EDWIN M. LOVE

This workbench combines something of the old with something new. The old is the substantial top made of 2 x 3s glued face to face, more rigid than the commonly used planks or plywood. Also old is the quick-acting woodworker's vise, home-built for economy, as is the tail vise. The latter is generally unknown to the present generation, but was indispensable to old-time cabinetmakers. It holds a board solidly with no lug or screw above the surface of the stock.

One of the new ideas is the pull-out shelf with a "catch tray" for kit builders and model makers. Small parts will drop into the tray rather than being lost on the floor. The doors of the shelf compartment provide storage for containers of nuts and bolts, and there is an easy-to-reach holder for soldering guns and hand grinders. Quite modern are the shallow drawers for holding files, chisels and other thin tools; the drawers can be placed on the bench top for permitting quick selection. Optional, very modern, features are a multi-position vise, Fig. 4, and snap-on surface clamps, Fig. 7, that can be fitted on the top, and removed in a moment when not needed.

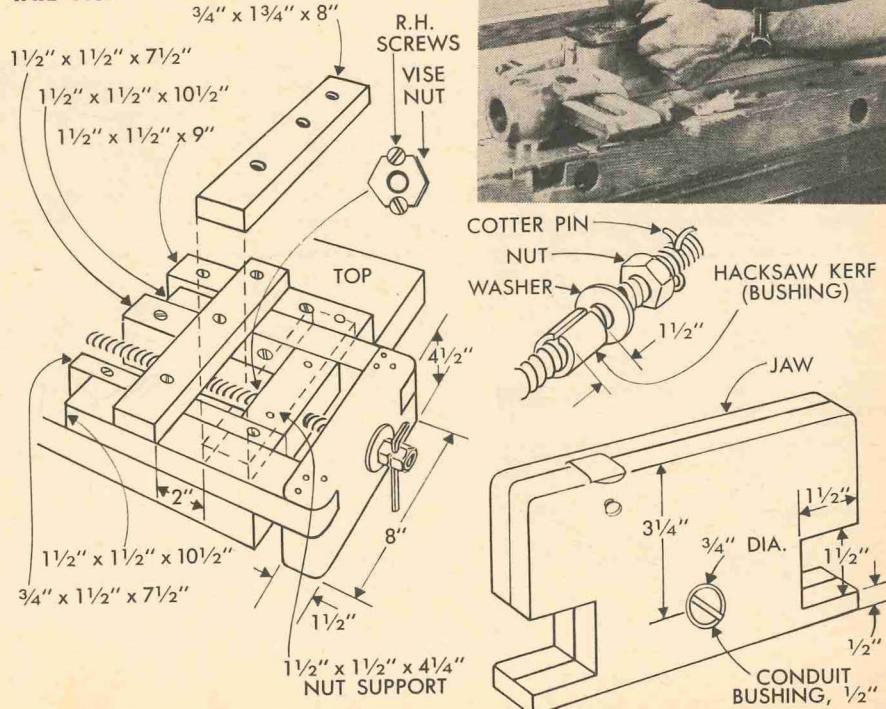
Assemble the framing of the bench first, Fig. 5; it then can be used as a worktable to construct the top. Rip lengths of 2 x 4 to 1½ x 3½ in. and notch the end rails,

top and bottom, into the front and rear rails as indicated. Join them with glue and 16d box nails; the box nails are smaller in diameter than regular nails and will minimize

splitting. Add the diagonal bracing and the framing for the end sections. Note that the left section is set back ¼ in. so the plywood panel will be flush with the bench front.

FIG. 2

TAIL VISE



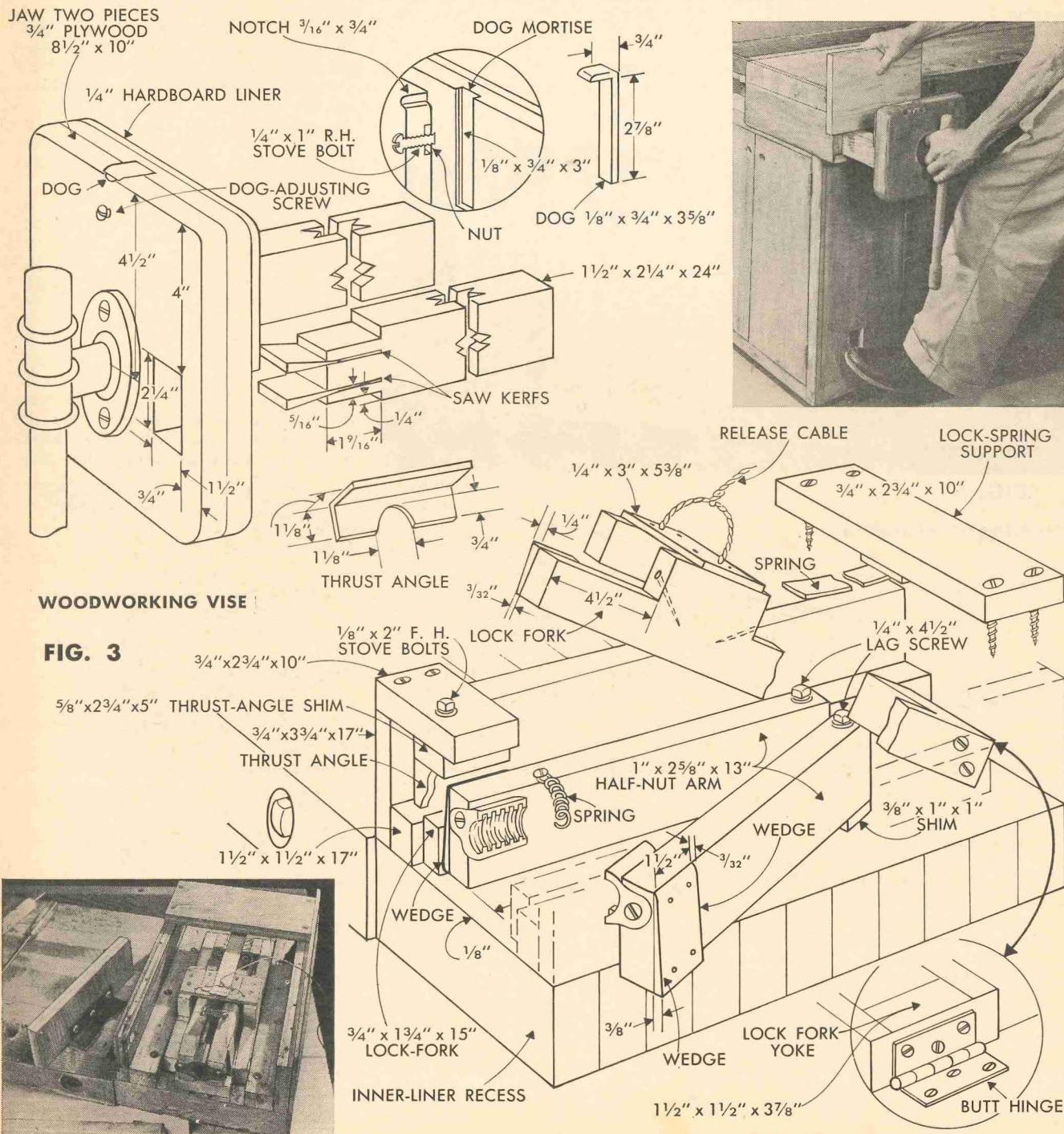
Install the framing, vertical and horizontal, between the cabinets, then install the various drawer runners. The latter can be sized according to the stock on hand. Set them back 5/16 in. from the front of the framing to allow for the drawer fronts that are made flush. Lubricate runners with paraffin.

Now build the top. Select six clear, straight-grained 2 x 6s, hardwood or softwood, and rip down the center. Plane all four faces flat and true. Match up the strips sapwood to sapwood and heartwood to heartwood; this alternating will minimize warping. (Note the grain

pattern, Fig. 6.) Clamp them together and drill 5/16-in. holes through them four places, Fig. 6. Counterbore the outer strips to recess the nuts. Also notch the strip second from the front for the stops, as shown. Test the strips for fit by clamping on the rods that can be threaded stock or plain rods threaded about 1 in. on each end. Apply glue to the joining faces of the strips, clamp together loosely and align the top surfaces of the strips. Tighten the rods, and also use bar clamps if you have them. Wipe off excess glue and put the top aside for the glue to dry.

Install two duplex receptacles, one below the vise, the other inside the cabinet below the electronics shelf. Use three-prong grounded receptacles, connecting them with three-wire non-metallic covered cable to a three-prong plug that can be fitted in a grounded receptacle in your shop. The cable is run under the bench top and over the rails; notch the rails as necessary.

Build the drawers of 1-in. solid stock or 3/4-in. plywood, cutting grooves in the sides to match the runners. Size each drawer to its opening, allowing 1/16 in. clearance all around.

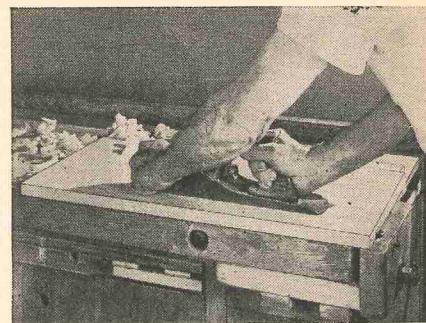


The grinder support, (in the original a wet-type stone is used, made by Boice-Crane Co., but a dry grinder also could be used), is simply a plywood shelf with a front nailed, glued and braced to it, Fig. 8. The front is split horizontally slightly above center and hinged to drop down when the grinder is used. An oilstone is fitted in the space behind the grinder. Nail stops to the stiles, Fig. 5, so the front of the grinder support closes flush with the front framing.

The top is dry by now and can be smoothed and trued with plane, scraper and sandpaper. Place some kind of padding on top of the bench framing, then invert the top on it and build the vises on it.

First make the quick-acting wood-

worker's vise, Fig. 3. Purchase a vise nut and cut it in half lengthwise and mount the halves on the arms. Glue and nail the hardwood wedges at the fronts of the arms, and pivot the arm on lag screws as indicated in Fig. 3. The nut-closing device is a lock fork that carries matching wedges, and which is hinged at the back to drop down. The arms of the fork are joined with a plywood strip to which the release cord, a length of 1/16-in. airplane shock cord or picture wire, is attached. On either side of the fork attach strips 1 1/2 in. square to the bench top. Protect the vise nut from clamping strain by facing the end with a piece of steel angle ground to clear the vise screw. Fit this under the guide tie where it



4. Multi-position vise is handy because it will hold work at various angles, can be removed completely from top.

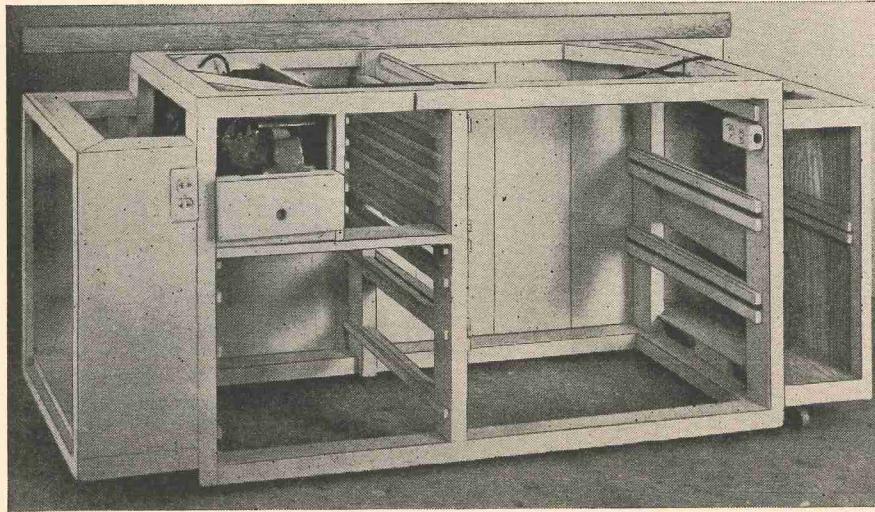
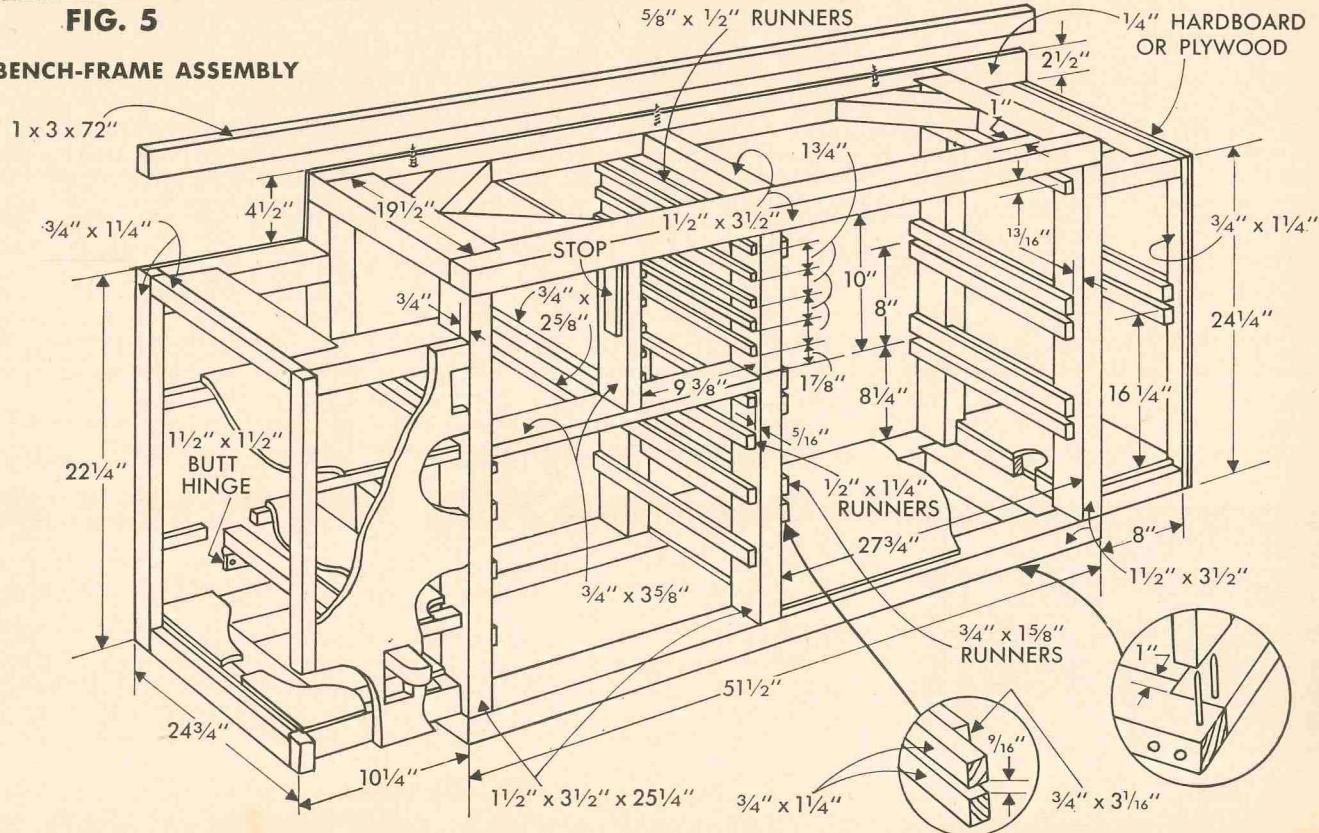


FIG. 5

BENCH-FRAME ASSEMBLY



grazes the end of the nut. The rear tie carries a stiff flat spring, such as a ShopSmith hold-down, held with the heads of three roundhead wood screws. The spring is shimmed to tilt downward, the curved end resting on the fork-lift bridge with a rubbing plate of sheet metal beneath it, Fig. 3.

Make the vise jaw of two pieces of 3/4-in. plywood glued together. Before joining them mortise the inner piece for the dog and the outer jaw to accept the nut of the dog-adjusting screw. Also, bore the screw hole and notch the top to accommodate the bent-over top of the dog. When the jaw is assembled, bore the hole for the vise screw, and counterbore for the handle washer and cut mortises for the ends of the vise rails, tenon the ends,

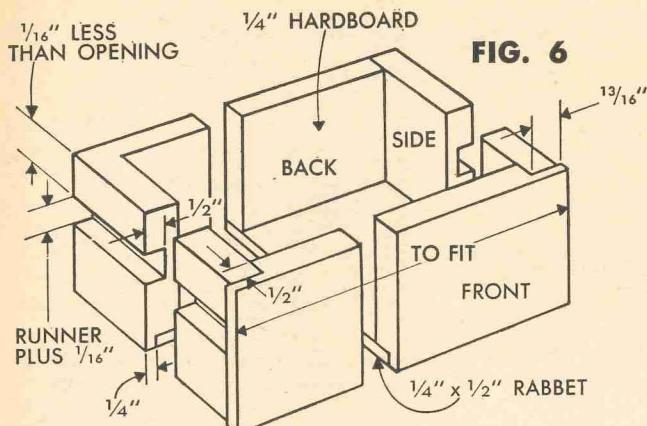
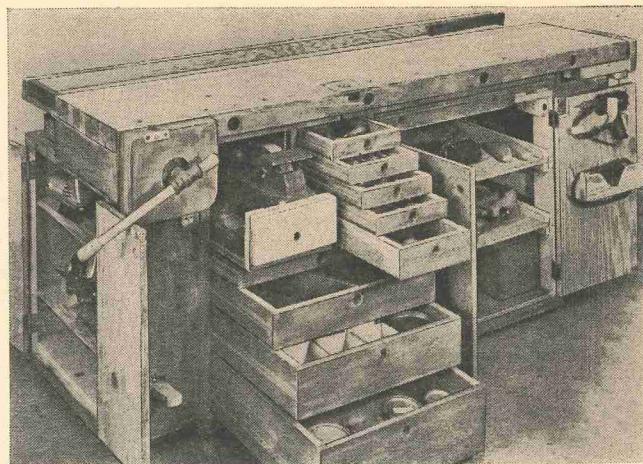
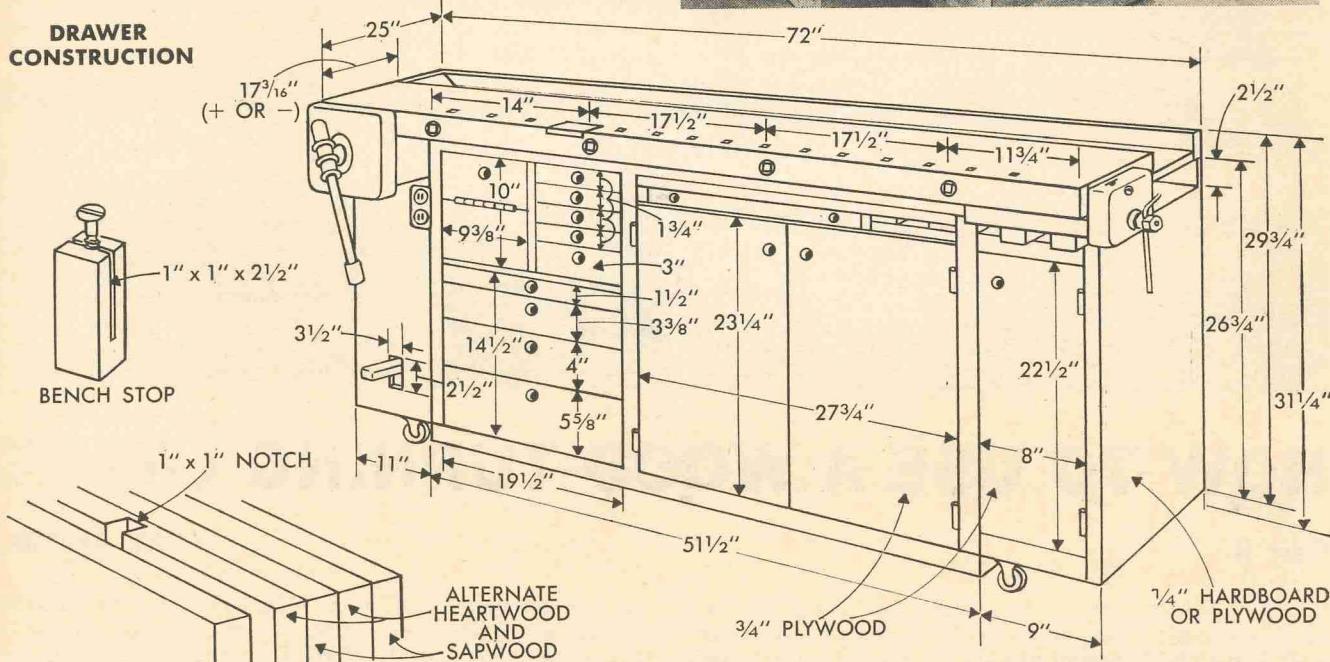


FIG. 6



DRAWER CONSTRUCTION



kerf them, then glue and wedge them tightly in the jaw. Trim any projections of the rails after the glue has set. Fit the sliding members and coat with grease. The vise screw, handle and washer are purchased as a unit.

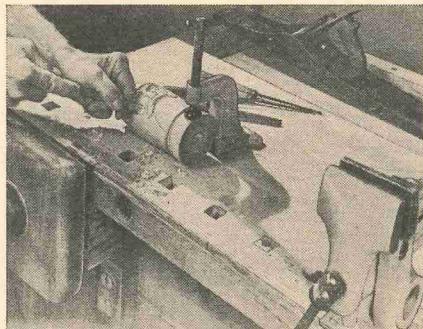
As the tail vise, Fig. 2, is not quick-acting the rails move between guides screwed to the underside of the bench top. The screw is made from threaded $\frac{5}{8}$ -in. rod. Bush the jaw hole with a piece of $\frac{1}{2}$ -in. thin-wall tubing split lengthwise and spread to fit over the screw. Secure the screw in the jaw with a nut and washer inside and two nuts and a washer outside. Drill a small hole behind the inner nut and fit a cotter key. Turn the two outer nuts tightly together, drill between them and insert a stiff wire—a long-handled Allen wrench would be good—for a handle. For the vise nut, mortise a nut and washer into the back of the wooden support and hold it with roundhead wood screws at the edges.

Turn the bench right-side up after notching the frame rails to clear

the release parts for the quick-acting vise. Hinge the pedal and attach the cable. Pressure on the pedal releases the nut halves for quick action, releasing the pedal permits clamping the work.

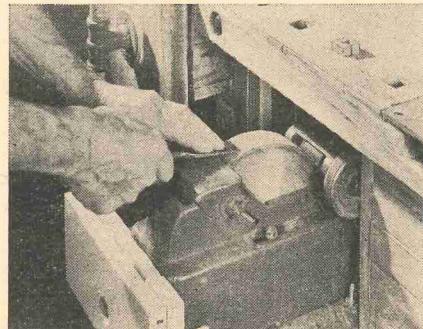
Bench stops are blocks of wood, as in Fig. 6, split 4/5 their length with a large flathead wood screw inserted. Turn in the screw, slip the stop into a bench hole and tighten to lock.

The electronics bench, Fig. 1, is

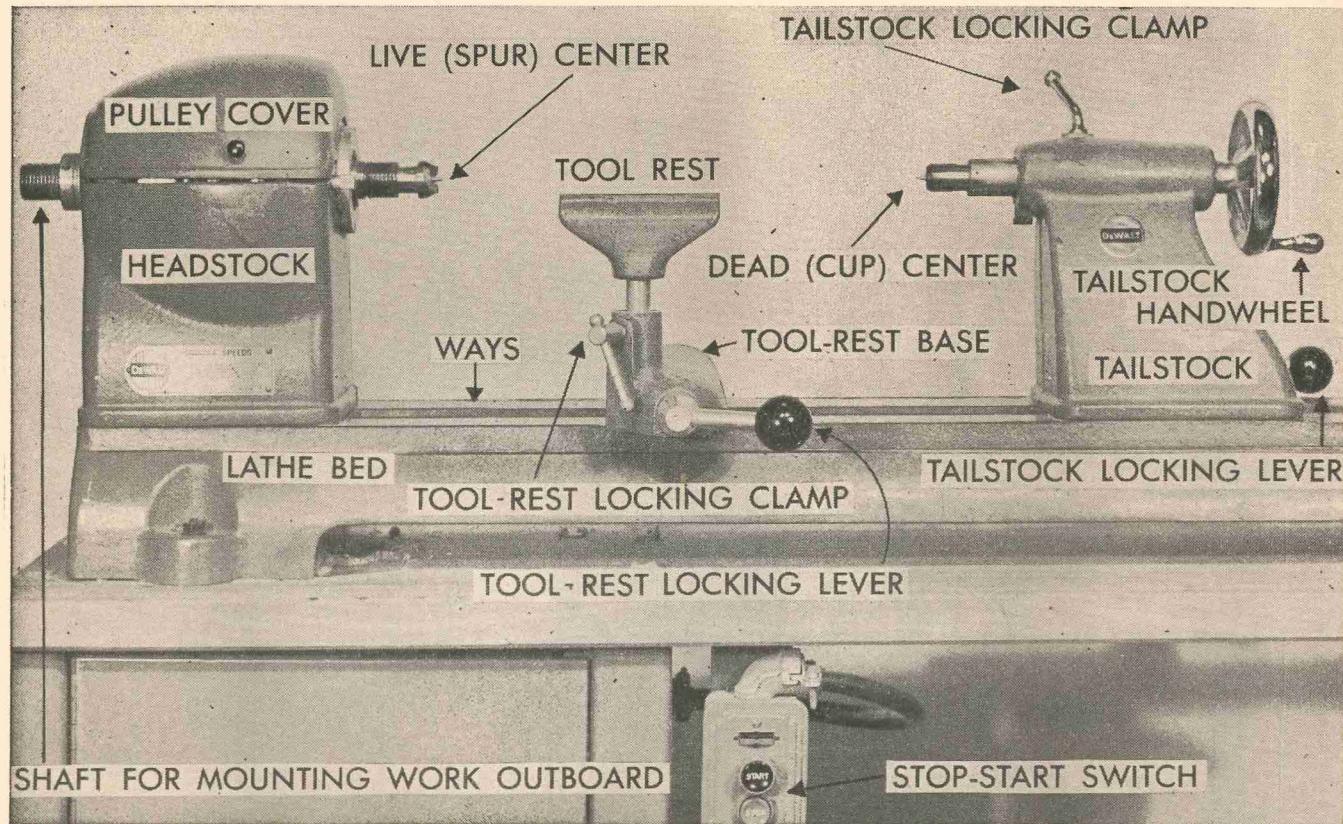


7. Surface clamps such as this one holding carving are held by bolts that fit in T-slot in clamp. Bolt drops flush.

a plywood shelf running on cleats under the bench top. The catch tray is made and attached as indicated. Place removable shelves in the left bench compartment; a good place for sanders, jig saws, etc. Notch the shelves to clear the release cable. Shelves of $\frac{3}{4}$ -in. plywood are installed under the electronics shelf. Hang doors with $\frac{1}{16}$ -in. clearance all around. Attach a 1×3 to the bench frame at the back, fill in with a board to make a tray. △ △



8. Grinder—wet-type in this case—pulls out from bench ready for use. Oilstone is stored behind grinder on the shelf.



HOW TO USE A WOOD-TURNING LATHE

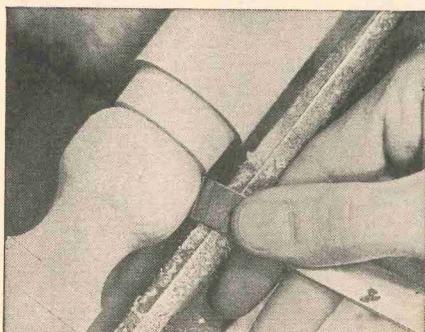
Part II

PAT SNOOK

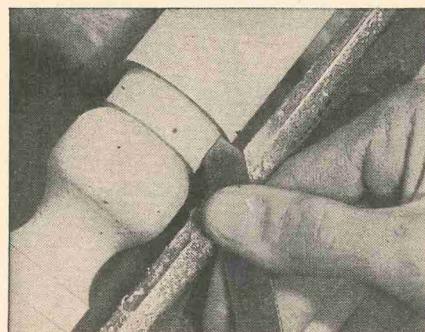
In this second part of the article on using a wood-turning lathe we will start out by repeating something stated in Part I: Spend almost as much time sharpening the chisels as you do in turning the project! This is important; a sharp chisel will cut cleanly and smoothly, will not gouge the work nearly as quickly as a dull one. With a dull chisel you try to force it to cut, and the result is that it catches in the work and can be thrown from your hand. On a multipurpose tool, such as a ShopSmith, and on some lathes it is possible to drive a very fine grinding wheel on the outboard shaft and it can be used frequently to touch up a chisel. A light honing with an Arkansas stone will create a razor-sharp edge on a chisel.

Do not start with a fancy turning as your first couple of projects. Try to make a straight cylinder and pro-

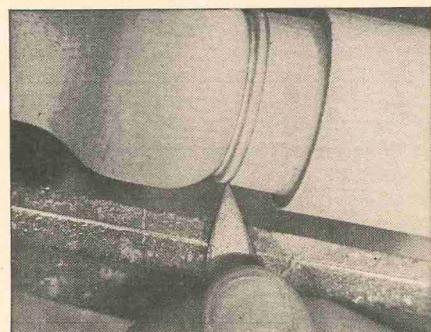
duce a smooth finish on it. You can practice on soft-wood, as it is less expensive, but you cannot create as smooth a finish as on hardwood, so expect this problem. Even with softwood, choose stock that is clear and straight-grained. Irregular grain and knots can create all kinds of problems when a chisel runs into them. If you do catch your chisel in the stock, stop the lathe and make sure the work has not split. If it has, discard the work and try another piece of stock. If it has not split, make sure the work is still firmly held on the dead center. If it has loosened, turn the tailstock handwheel slightly to snug up the dead center. Turn the lathe slowly and use a gouge to scrape away the damage you created when the chisel caught. Be careful, but have fun. After all, that is what woodworking is all about. Now for some more tips on using a lathe.



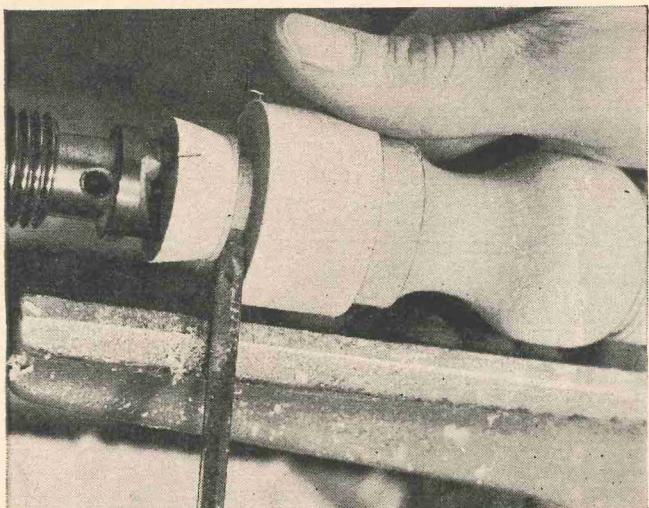
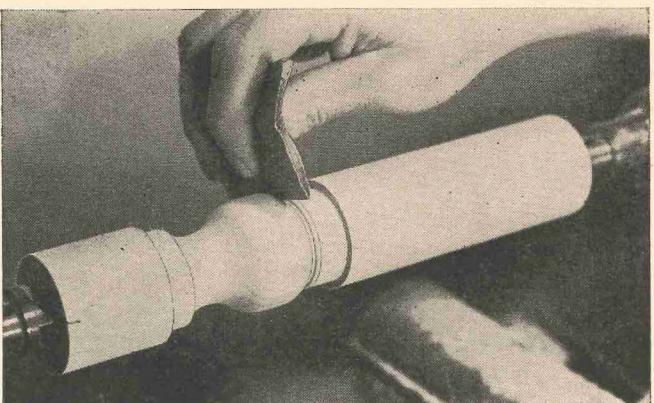
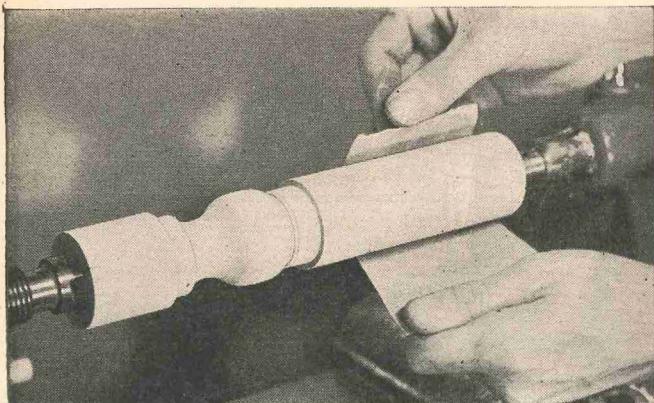
Outside-curve cuts can best be finished by using a small skew chisel. Note how close the tool rest is to the workpiece.



Finishing and squaring a shoulder on a turning is best done with a spear-point chisel with a right-angle point.



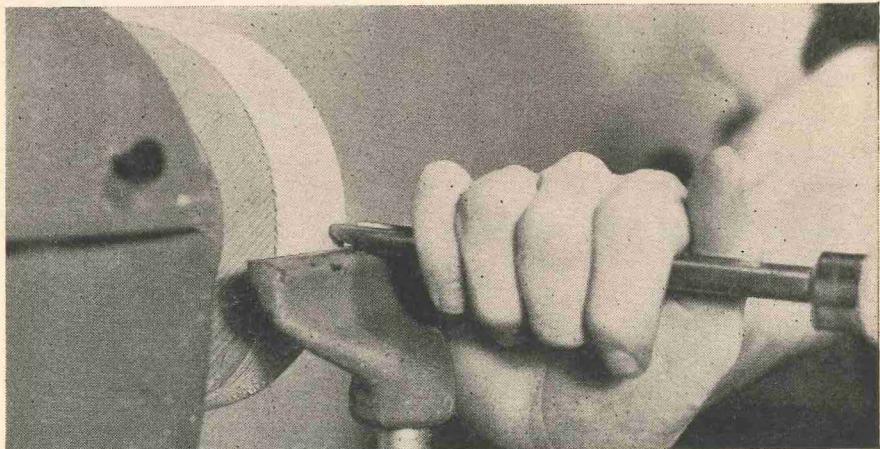
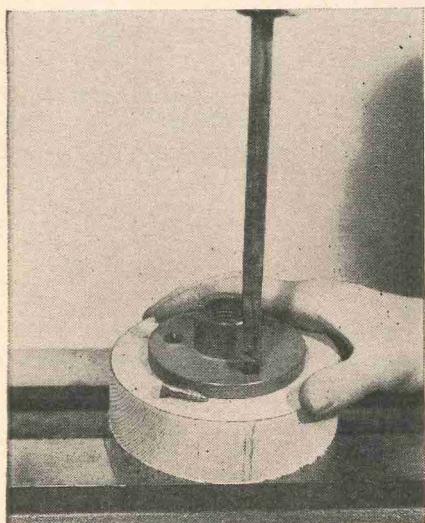
For very fine scoring and bead turning you can make a special tool by grinding down the blade of an old screw driver.



Fastest way to sand flat sections of a cylinder is to wrap paper part way around to contact maximum surface.

To sand narrow grooves and scorings, fold a length of sandpaper and use the doubled edge. Press lightly to sand.

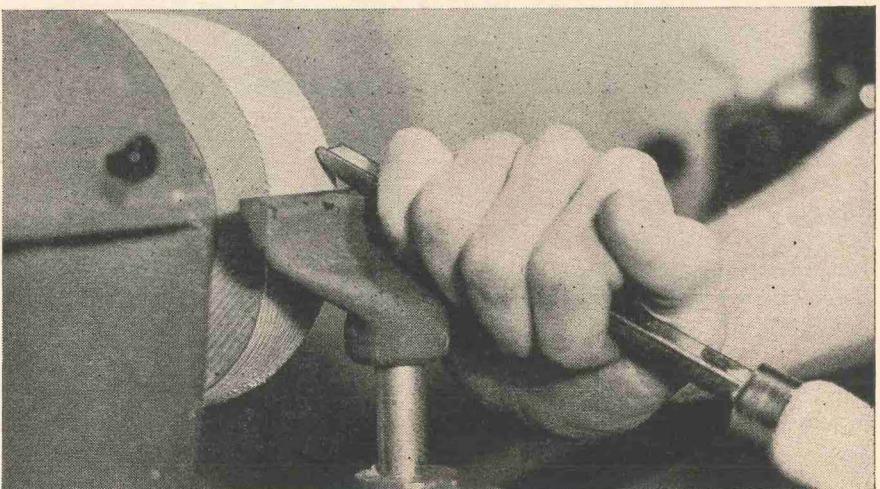
When turning is finished and sanded, it is removed by reducing tail stub to $\frac{1}{2}$ in. Turn lathe slow, cut with parting tool.

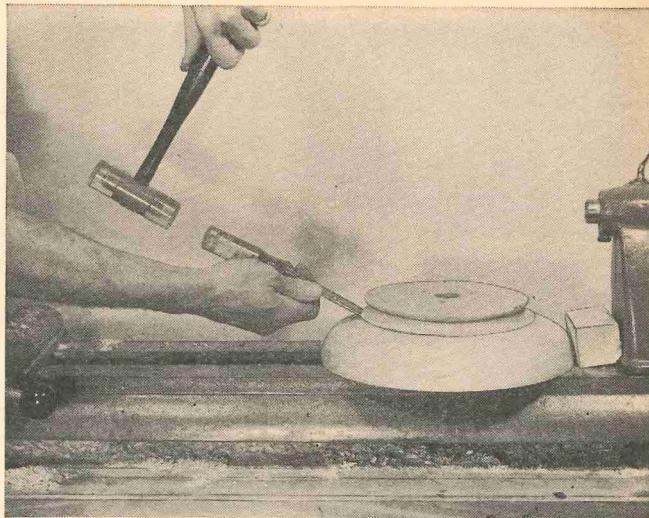
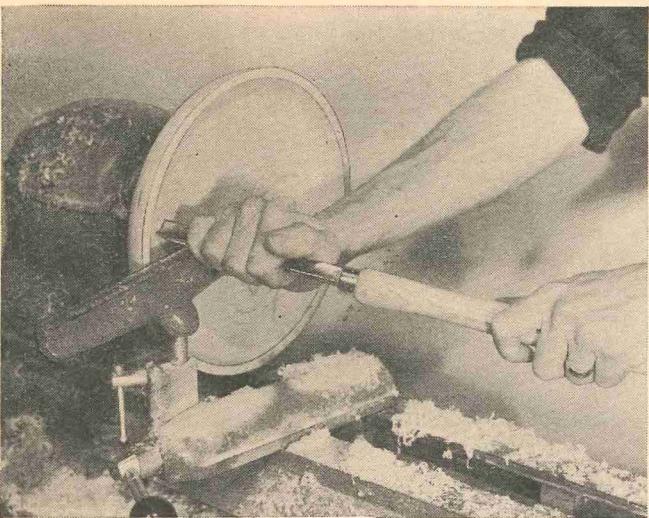


For faceplate turning stock is first sawed to rough shape, then screwed to faceplate with short, heavy screws.

Scraping, as here, is commonest cut. Tool rest is below center, chisel is almost horizontal. Note hand position.

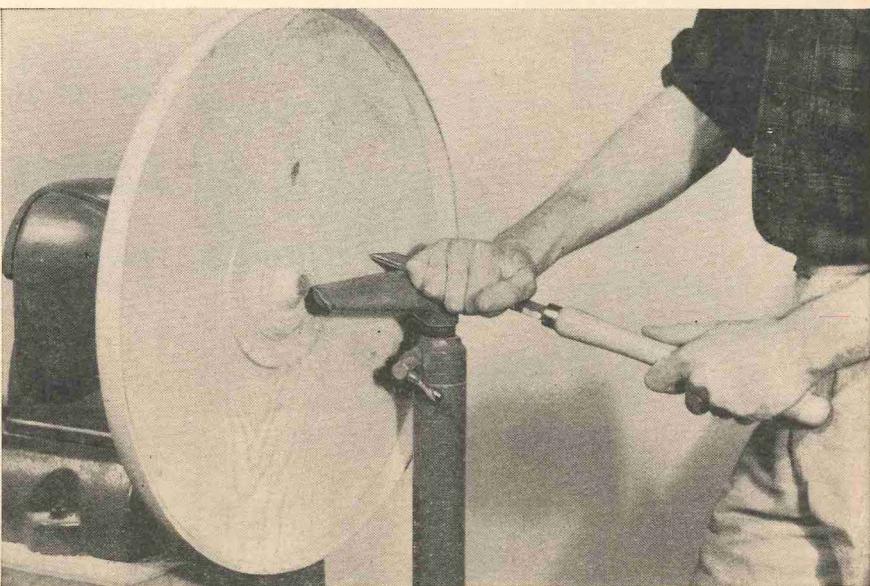
Shearing, shown here, is faster, creates smoother finish. Rest is above center line, sharp chisel is held at angle shown.



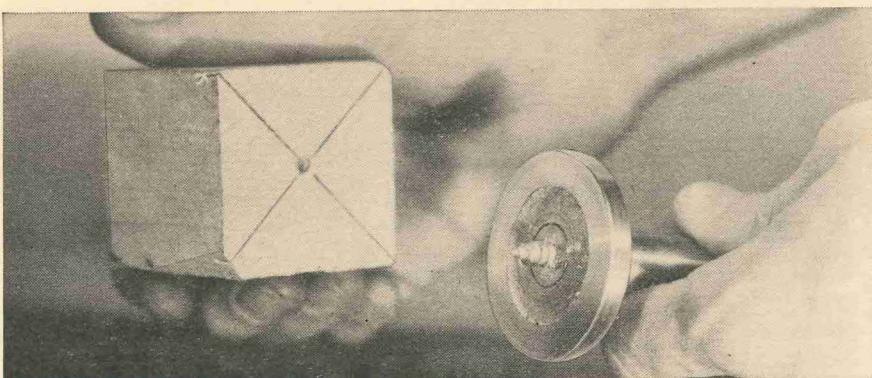


As with spindle turning, roughing on a faceplate job is done with large gouge. Operator can stand behind lathe.

For thin faceplate turning, glue on block with paper between so screws do not penetrate work. Later, remove block.

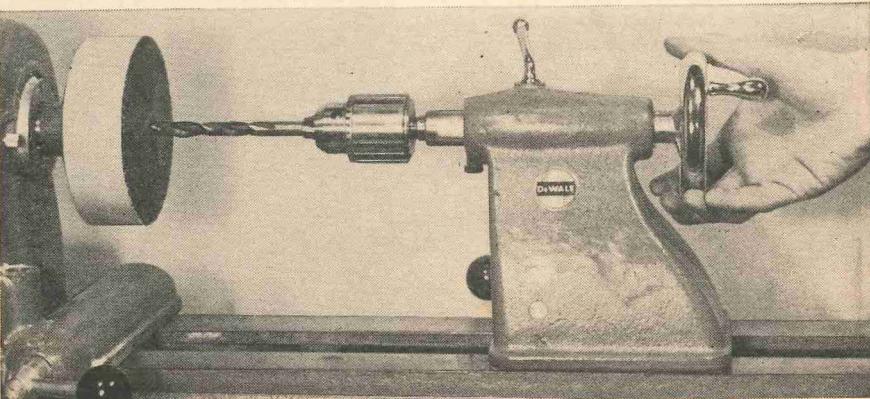


For work that is too large to handle over bed of lathe, outboard setup, using pedestal-type tool rest is employed.



Small work that cannot be set up between centers usually can be handled with a screw center.

Center boring can be done in lathe by using chuck in tailstock. Run lathe at slow speed, advance bit with handwheel.



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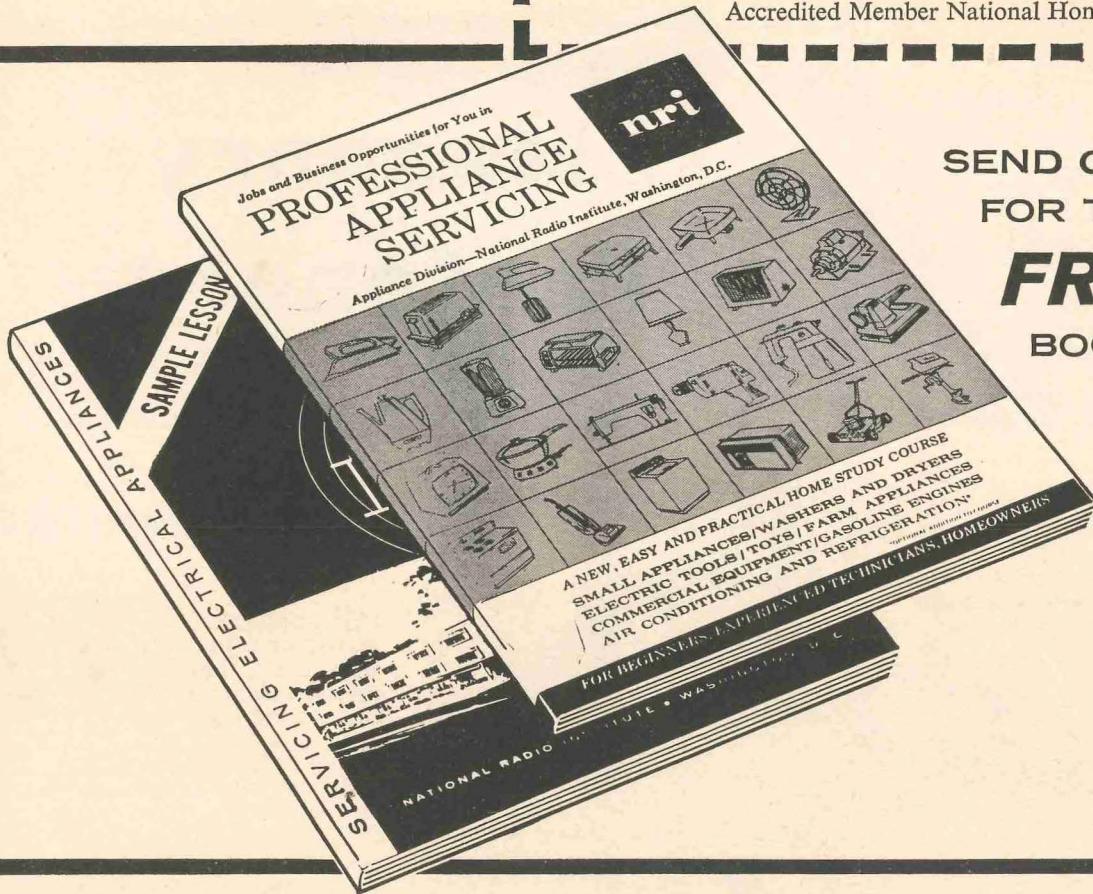
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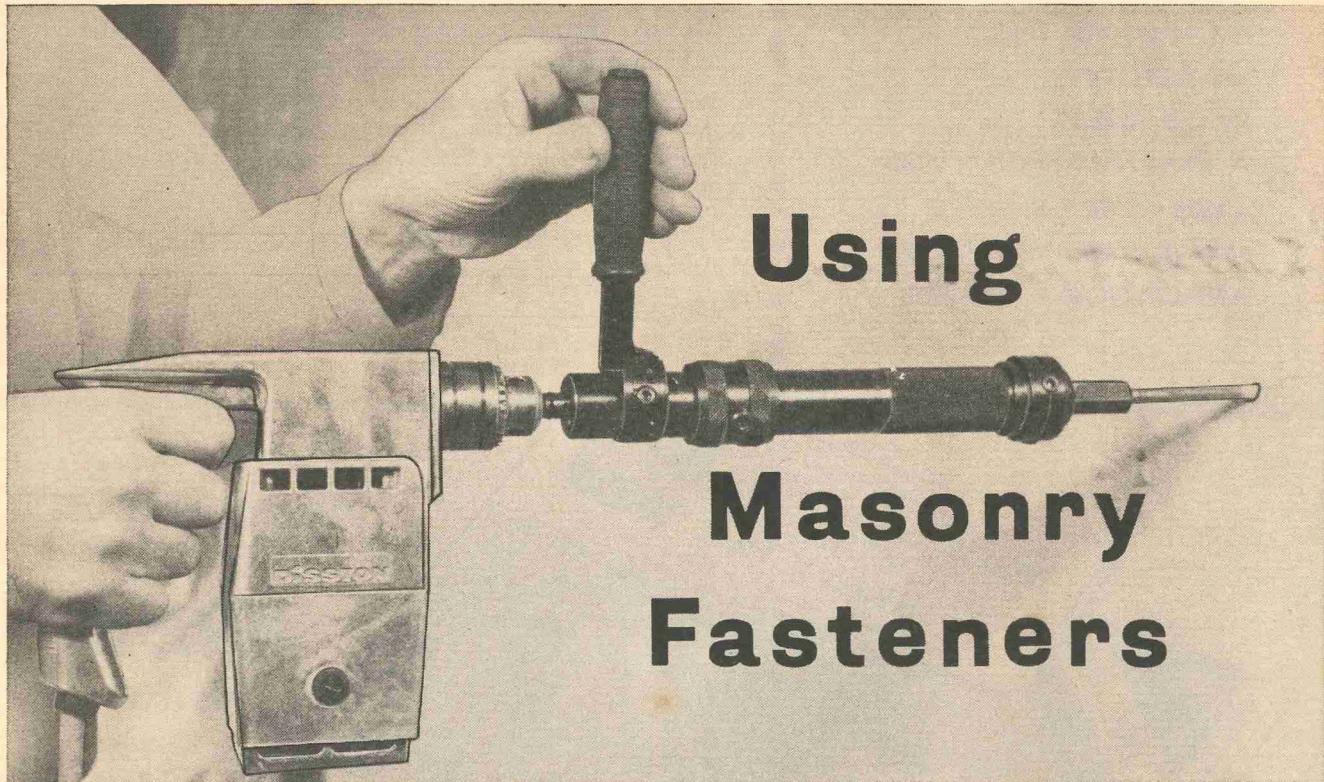
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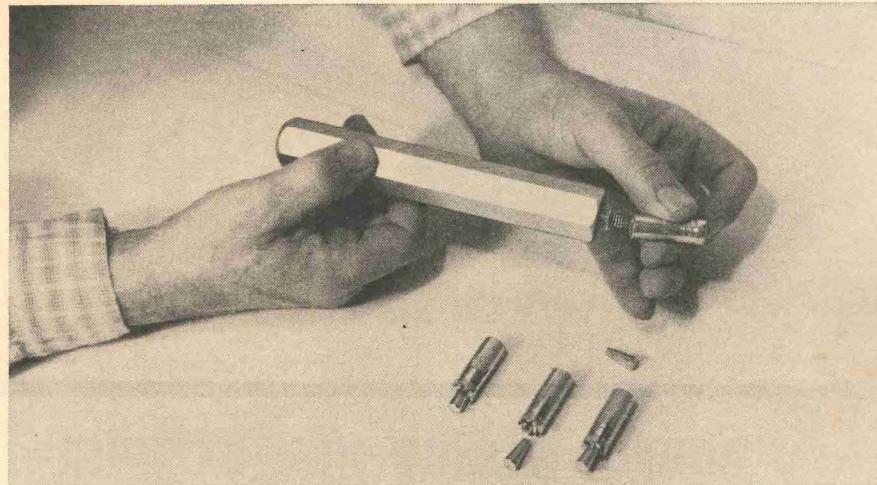


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Using Masonry Fasteners



RALPH TREVES

If you have used masonry fasteners in the past and had a tough time with them, better check into the newer anchors and the devices used for drilling holes in concrete, brick, tile and stone.

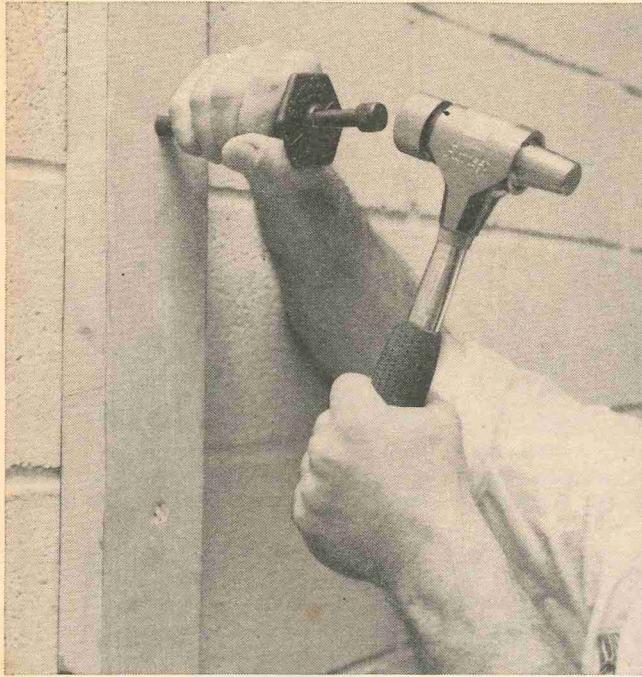
One device, the Rawlplug Saber-Tooth anchor is its own star drill, which means you have a fresh, sharp drill for every hole. After the hole is drilled, the device is removed, an expander is slipped into it and it is returned to the hole and set with the same handle that holds it for drilling.

Our lead photo shows a new device that fits any electric drill turning at 1,500 to 2,000 r.p.m. Each revolution of the drill creates a hammer blow and the unit quickly hammers a hole in the toughest masonry. The Rawl Drill Hammer can be adjusted for light, medium and heavy hammering.

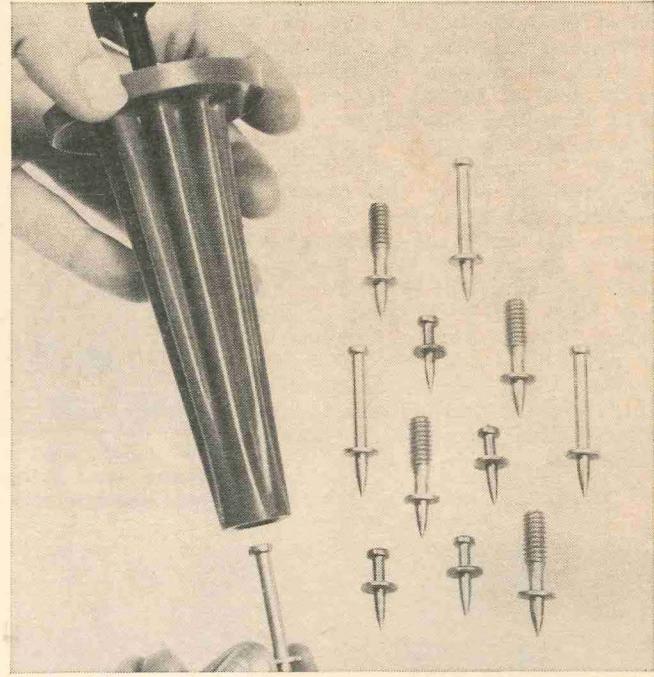
No drilling is required for the Ramset Shure-Set tool. Specially-hardened fasteners are fitted in the barrel of this tool, then driven with a hammer into concrete, stone and



Rawl Saber-Tooth anchor is its own star drill when fitted in holder. After the hole has been made, the anchor is withdrawn, an expander plug is fitted in the anchor and it is replaced and set.



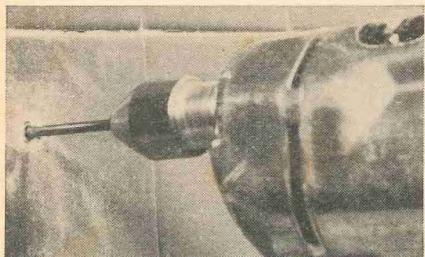
Shure-Set unit has deep tube into which fastener fits so it is not bent when driven. Collar protects hand when hammering.



Washer on various, specially-hardened fasteners keep them aligned in tube, permits them to be driven into concrete.



When installing anchor in ceramic tile, first step is to break glazed surface by using awl or ice pick at location.



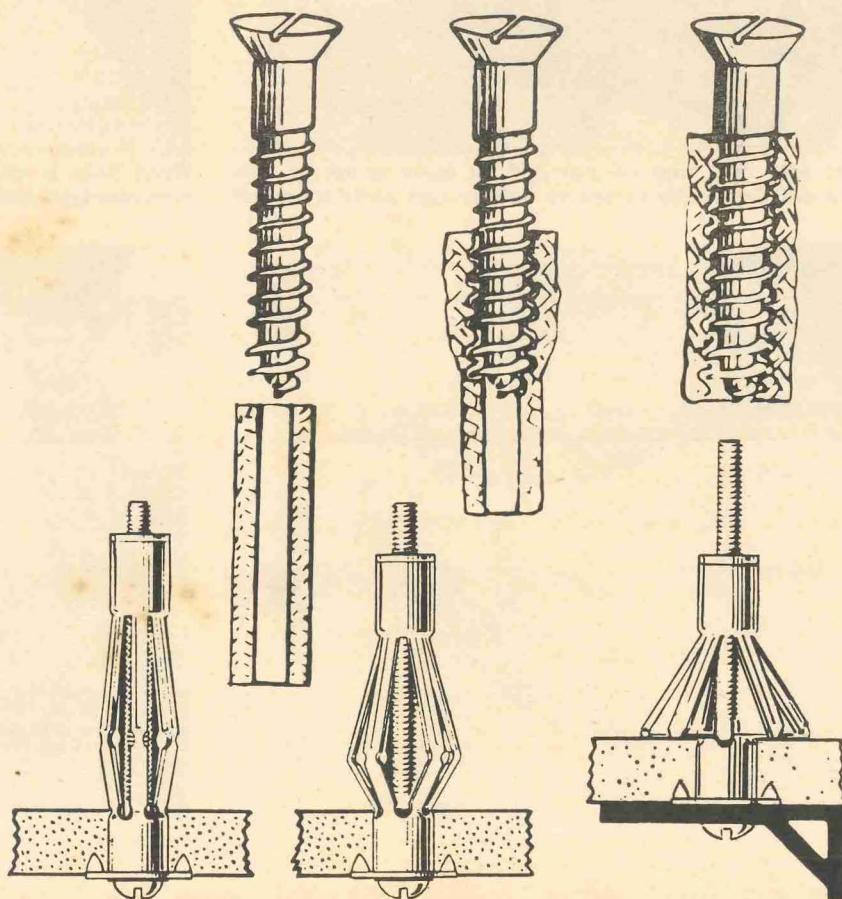
A carbide-tipped masonry drill is used for brick, stone or tile. Drill motor should be of the slow-speed type.



With hole drilled and cleaned out, anchor such as lead-center fiber Rawl-plug can be installed for screws.

even steel. As shown in the one illustration, the fasteners can be threaded studs or plain nails. Nails can be driven through the wood directly into the masonry.

When drilling through ceramic tile the hole location is marked with an awl and the glaze broken. A carbide-tipped bit is used to bore the hole. The anchor then can be inserted



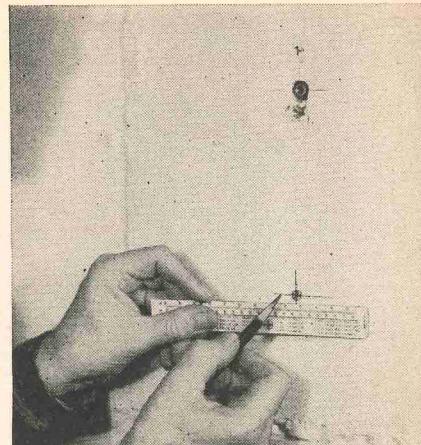
and the screw driven. Use a slow-speed drill motor, if possible, to make the bit last longer, stay cooler.

In the one drawing is shown how wood screws driven into a lead-fiber Rawlplug expand the device. The other fasteners shown are "Molly" fasteners and are used in plasterboard walls, thin masonry surfaces and in wood.

The one series of photos shows how to assure that such things as shelf brackets will be plumb. The first hole is drilled and the screw driven into the anchor. The bracket is plumbed and the other hole marked. The bracket is removed, the hole is re-marked and checked then drilled and the anchor installed. △ △



To install shelf bracket, install first anchor, bolt bracket in position. Mark next screw location through bracket.



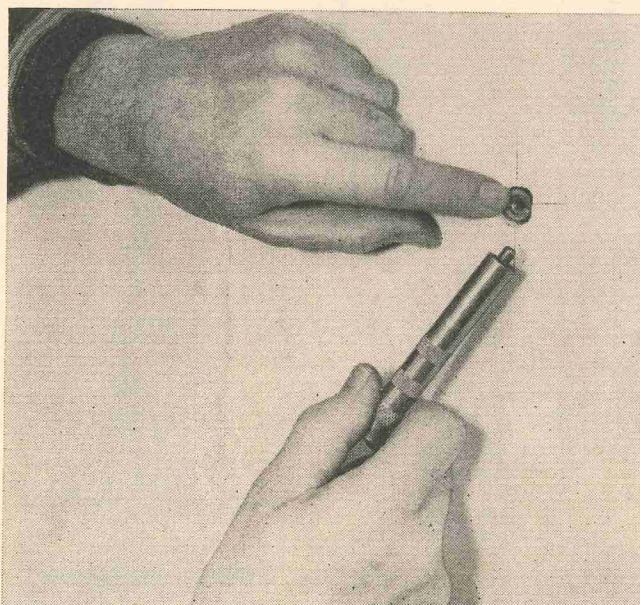
Remove bracket, draw center lines in circle that was marked through opening in the bracket. Doublecheck marks.



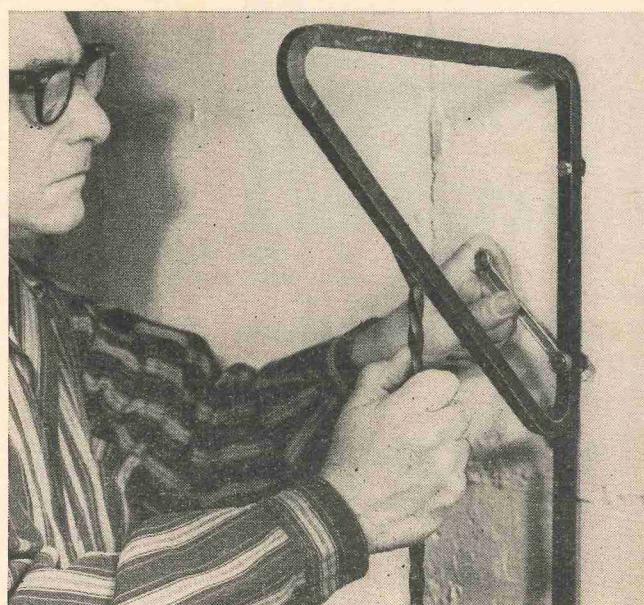
Start with light taps on star drill, at exact center of hole. Turn drill frequently to assure hole is kept perfectly round.



When hole is correct depth, insert screw anchor, (lead expander-type here), expander down, at bottom of hole.



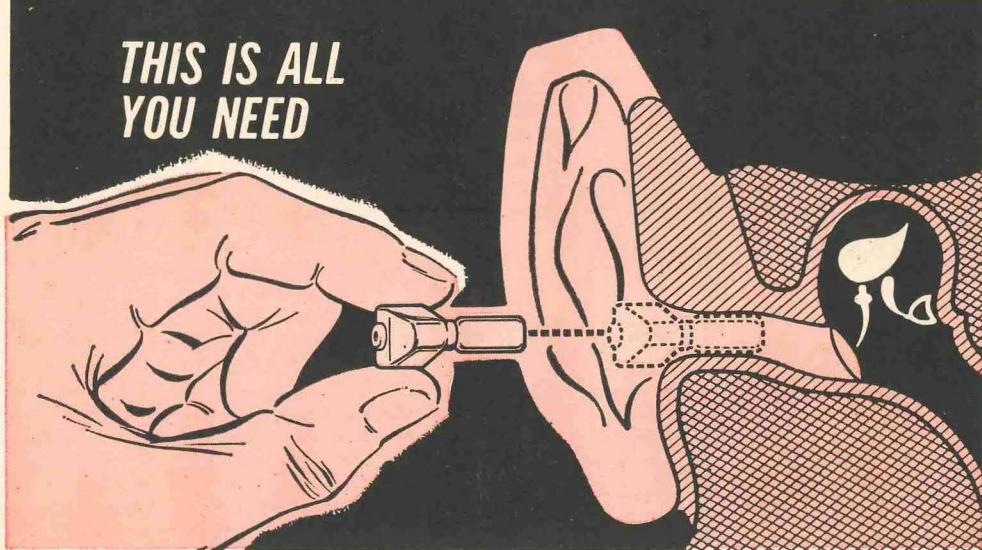
Special set is used to lock screw anchor in the hole. Pin in set fits screw hole, set itself drives anchor down.



Both screws now can be turned into anchors, shelf bracket is firmly attached to wall in perfectly vertical position.

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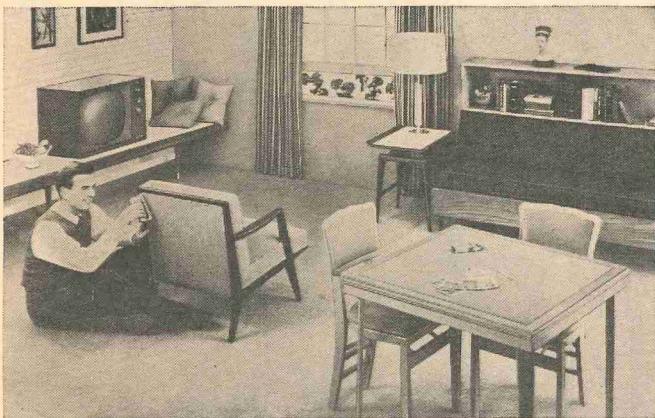
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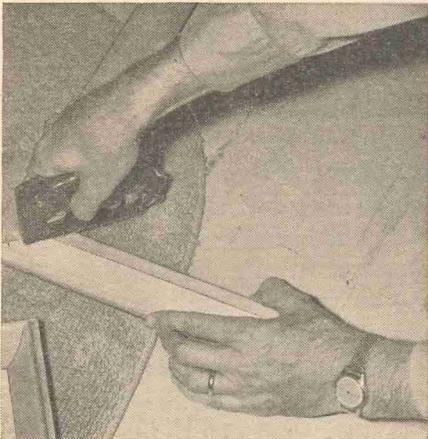
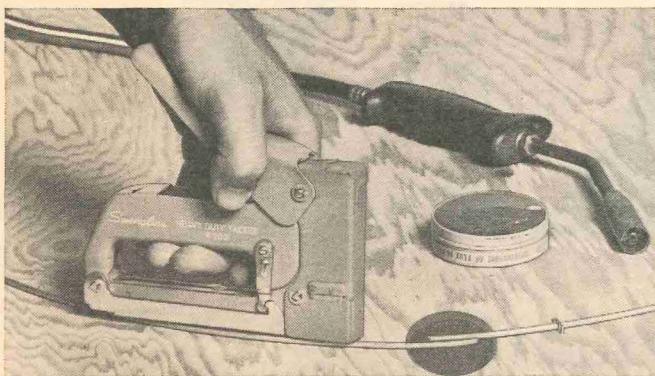


STAPLE-GUN TIPS

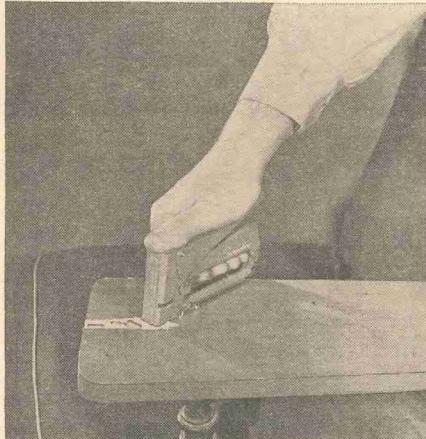
Photos courtesy Swingline, Inc.

One of the most versatile of tools in the home or workshop is a staple gun. Not all home craftsmen, however, use one correctly. For example, you do not squeeze a staple gun like you would the handles of a pair of pliers, but push against the handle. This does two things, it actuates the gun and holds it firmly against the surface, assuring the staple is driven solidly. When driving a staple in a firm material such as hardwood, hold your thumb firmly over the stapling end of the gun. This assures that all the power of the gun drives the staple, rather than having the gun recoil or bounce up, with the staple driven only part way. Sometimes a thumb isn't enough and your free hand can be held over the end of the gun to force the staple deeper. Use the shortest staple that will do the job; this is both economical and practical. A staple with short legs will drive more easily in a hard surface. For special jobs, such as applying ceiling tile, use a staple specially designed and coated to hold tiles. Shown are a few tips on using both a light and heavy-duty gun. △ △

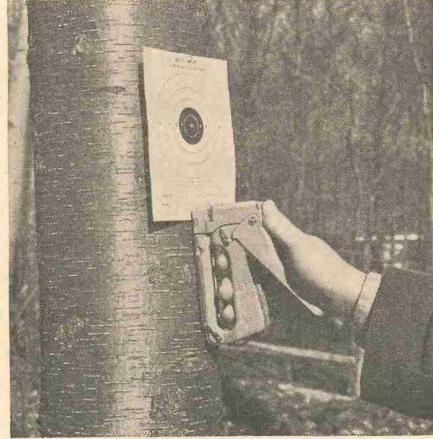
Soldering two round wires together can be tricky, as the wires tend to roll apart. A single staple will hold each wire firmly.



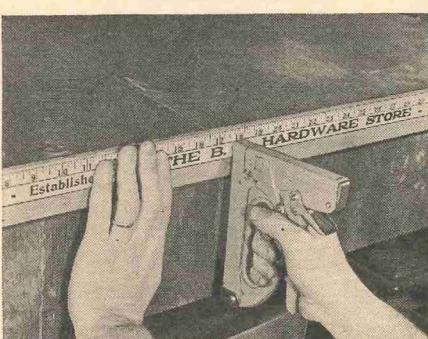
It is difficult to clamp the corners of picture frames to be glued. Several staples will hold; later removed.



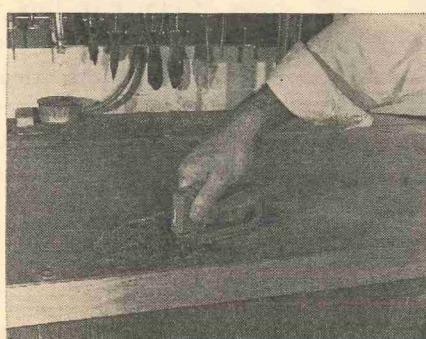
When filling large, deep areas with wood putty or plaster, tip gun slightly so staples will project for "keys".



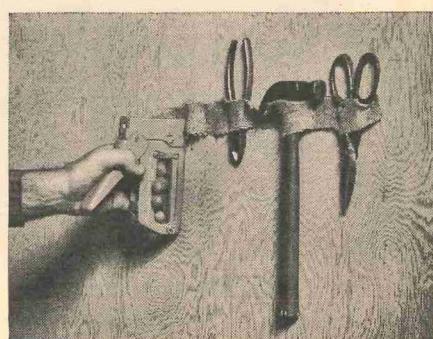
Targets stay in place when stapled to any handy object. Use staple at top and bottom to prevent flapping in wind.



For quick measuring at the workbench, staple a yardstick to the front edge. Yardstick definitely can't get lost.



For quick cleaning of soldering iron or gun, staple a pad of steel wool to bench top. It easily is removed.



Staple gun and strip of burlap or other material make a quick temporary holder for tools. Make loops to suit.

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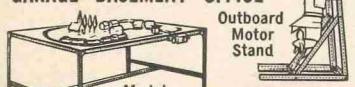
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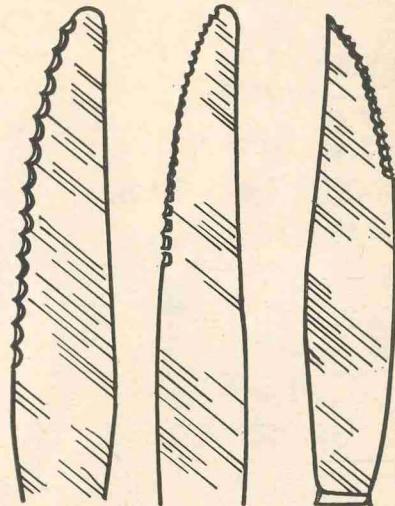
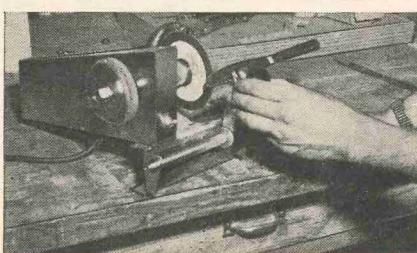
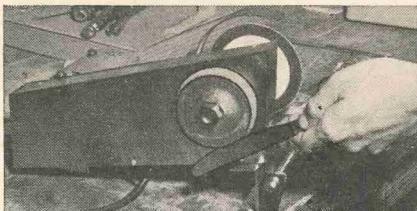
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PRODUCT REPORT:

Chain-Saw Sharpener Knife Serrator

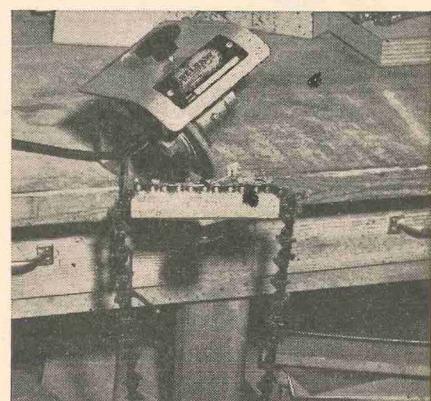
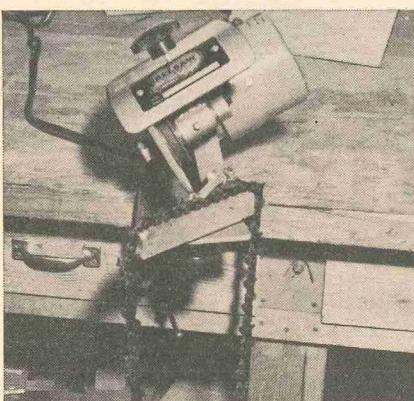


Two new products from the Belsaw Company should be of interest to anyone operating a saw and tool-sharpening business. We tested both products in the Model Shop, and found them excellent tools, easy to use and compact enough to be taken directly to the job when that is necessary.

We were especially intrigued by the knife serrator. This table-top device will make a serrated steak knife from almost any type of table knife. Stainless-steel knives are popular for both home and restaurant use, and these readily lend themselves to being serrated. As indicated in the sketch, various types and sizes of serration can be ground on the blades, on either the

right or left side. A grinding wheel fitted with a plate is used to smooth and sharpen the serrated blade and remove any burrs.

The Chain-Saw Grinder is so compact that it can be clamped to any convenient support, thus used on the job wherever electricity is available. The tool is readily adjustable to sharpen every cutter and grind each depth-gauge raker to the exact factory angles so you can produce a sharpened blade that will cut fast and clean. The grinder will sharpen all three popular styles of chain saw blades; the chipper, chisel and scratcher. For more information: The Belsaw Machinery Co., 315 Westport Road, Kansas City, Mo. 64111. △ △



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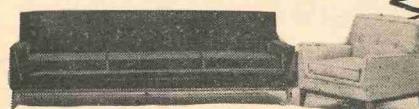
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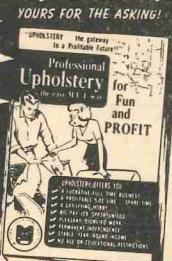


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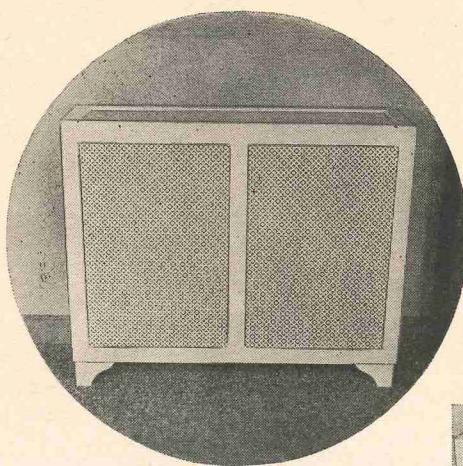
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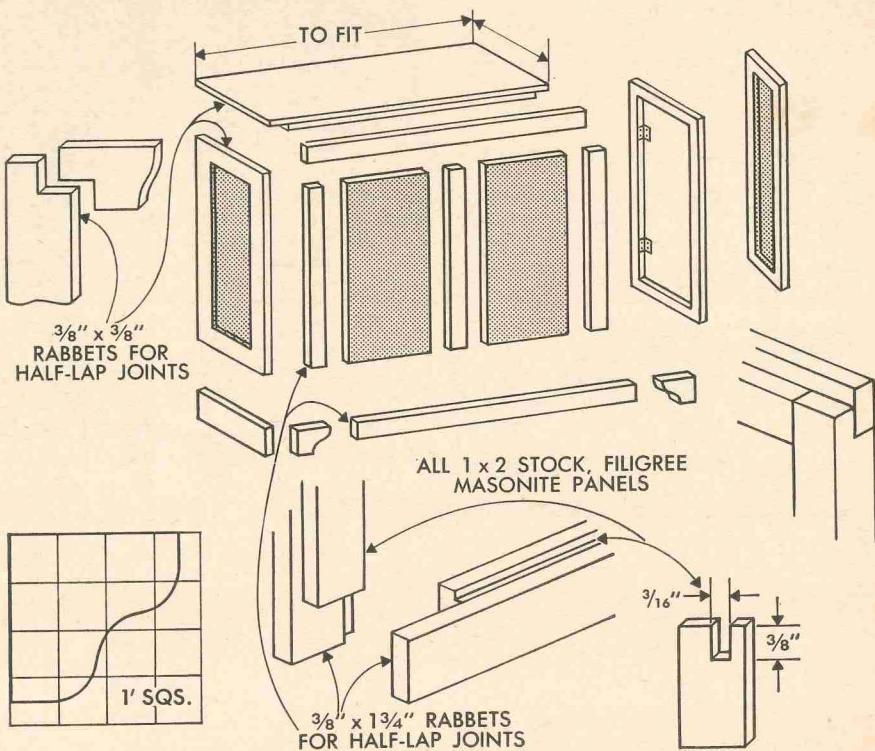
RADIATOR COVERS

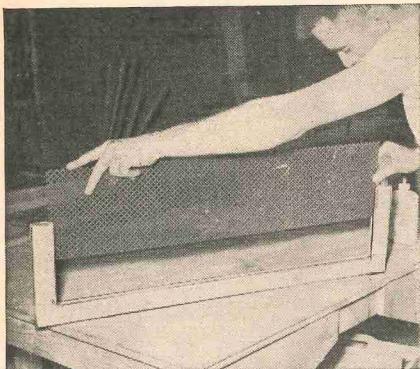


Old-fashioned, cast-iron radiators are awkward and ugly no matter how you paint them, and they certainly create a decorating problem. The solution to the dilemma is to cover them with attractive cabinets that are designed to hide them, yet reduce their heating efficiency by only the slightest amount.

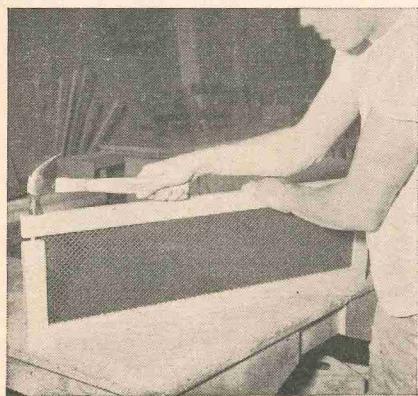
The cabinet-type covers are built with frames of 1 x 2 stock that are grooved to accept panels of filigree

hardboard. The panels provide both beauty and adequate heat circulation. Size the covers to fit the radiators you have, making them 1 in. larger in all dimensions than the radiators. The Masonite filigree hardboard is $\frac{1}{8}$ in. thick, so slots $\frac{1}{8}$ in. wide and $\frac{3}{8}$ in. deep are cut to accommodate the panels loosely. To cut the slot adjust the rip fence to be $\frac{1}{8}$ in. plus $\frac{1}{16}$ in. from the blade, (1-in. stock is actually $\frac{3}{4}$ in.).





Panels of filigree Masonite are slipped into slotted frames. Note dowels here, while drawing shows half-lap joints.



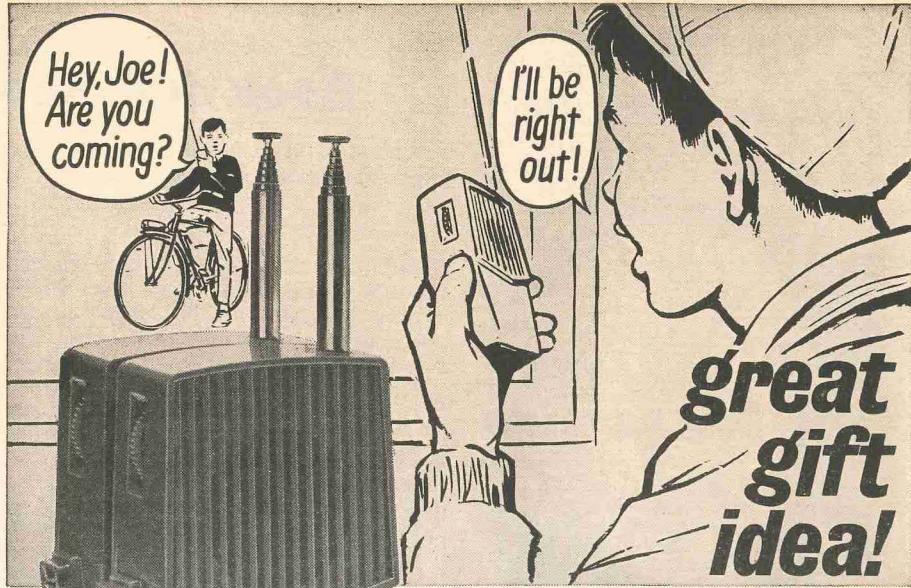
Cut panels slightly short so that when frame members are tapped together there is sufficient clearance.

and run the stock through. Reverse the stock and run it through again to create the $\frac{1}{16}$ -in. slot.

Doweled joints are shown in the photos, as used on the original, but the drawings show half-lap joints which make assembly somewhat easier. You can use either method of joinery.

One end panel must provide access to the radiator valve. "Dry-assemble" one end panel, mark a line down the centers of the frame members and disassemble the frame. Rip the members along the lines. You now will have a half-lapped frame within a frame. The inside portion, in which the filigree panel fits, is the door. The saw kerf should provide clearance when the door is hinged to the outer frame. Drill a couple of finger holes in the door frame and use a bullet catch to keep the door closed.

The "feet" of the cover are cut from $\frac{3}{4}$ -in. plywood or 1-in. solid stock, then glued and nailed in place. Use finishing nails for the assembly, countersinking the nail heads and filling with wood putty. Paint the covers to suit. Δ



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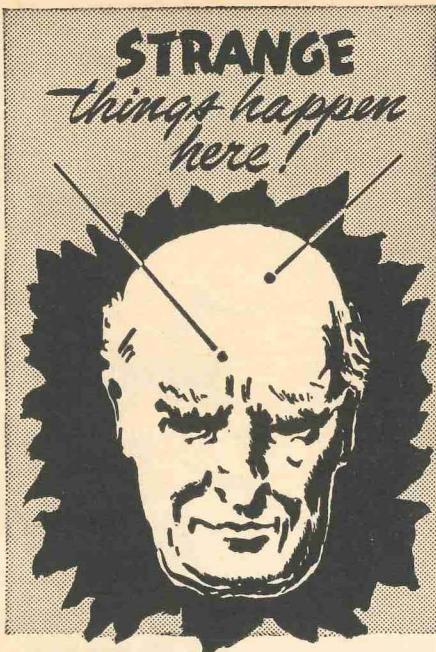
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Each of these two booklets is 8 pages in length, contains step-by-step photos showing the correct method for the installation of the materials discussed. The Suspended Ceiling booklet covers both the Slide Lock and "Box Beam" systems, the Ceiling Tile booklet covers both the stapling of tile to furring strips and cementing them directly to a surface.

HOME WORKSHOP MEASUREMENT AND DESIGN
By Richard Gordon
McGraw-Hill Book Co.
330 W. 42nd St., New York,
New York 10036 \$5.50

Almost half of this interesting book is filled with illustrations, which makes the book handy for quick reference as well as serious study. Have you forgotten some of the simple mathematics and geometry you learned in school? This book gives a refresher course, combining it interestingly with practical applications to workshop projects. The book tells how to read a micrometer and how to utilize a steel square to lay out rafters, design stairs, even convert fractions to decimals. Want to know how to draw an ellipse or parabola? Want to design an arch? What size single pipe is required to replace two smaller pipes? You can figure it mathematically, or with the steel square. If you have any kind of measuring problems, this book should be first in line in the workshop library.

INDEX TO HOW-TO-DO-IT INFORMATION
Norman Lathrop Enterprises
P.O. Box 83, Flint, Mich. 48501 \$3

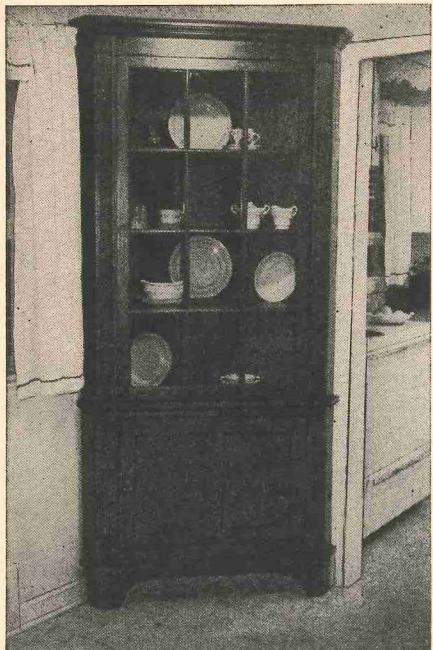
Have you ever remembered seeing a needed do-it-yourself article in some magazine but were not sure whether it was WORKBENCH or some other publication? This Index covers eleven magazines in the field, including WORKBENCH and even cross-indexes various subjects. The 134 pages of the 1964 index are divided into eleven major interest areas: auto, boats, electronics, furniture, house and home, model making, photography, sports, toys and games, workshop and general interest. There are 236 subjects that refer to 1300 articles. Every library and do-it-yourselfer should have this handy-size index, (5½ x 8½ in.), for quick reference to do-it-yourself articles.

DESIGN AND FIGURE CARVING
By E. J. Tangerman
Dover Publications
180 Varick St., New York, New York 10014
Paperback \$1.85

This is an unabridged reissue of a book first published in 1940. However, outside the references to the World's Fair of 1939, the material is as contemporary and up-to-date as any volume we have seen on wood carving. Thoroughly covered are all phases of wood carving, from deep and shallow relief, through chip carving caricatures and "folk" carving. There are 1,298 illustrations, including both photographs and sketches. If you are interested in wood carving you definitely will enjoy—and appreciate—this book.

CHAIR SEAT WEAVING
(for antique chairs)
Marion Burr Sober
Joy Road Studio
48234 Joy Road
Plymouth, Mich. \$2 ppd.

Restoring antiques often requires the weaving of a new seat, and sometimes the back. Making reproductions of antique furniture also requires this weaving. This book describes in detail how to handle the various types of weaving: cane, fiber-cord, rush, ash-splint and tape. Written in an informal, conversational style, the book instructs well and should be in the shop library of anyone who will work with antique furniture or build reproductions.



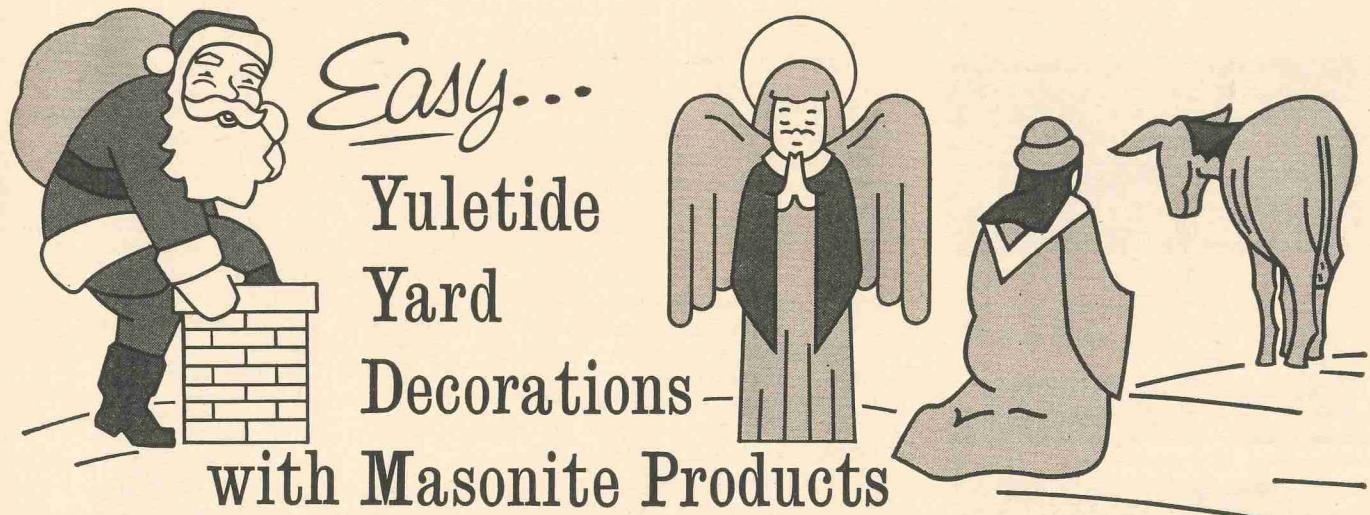
Winner of the WORKBENCH Handsaw Award this issue is Mr. Andy Rorer of Burlington, North Carolina. His entry is the Corner Cupboard that was published in the March-April, 1965 issue. Andy used all solid walnut and the finish is clear lacquer, hand-rubbed. About eight weeks of evenings and weekends were spent building the project and Andy says he enjoyed every minute of the time.

Andy says he has been doing woodworking only since 1962, and he began with a very difficult project, the grandfather clock that we published that year. Andy and other readers will be interested to know we have some challenging clock projects coming up in future issues. One is a French-Provincial clock case, and we have one clock-works all of wood, with no gears, and another with five wooden gears.

His shop is quite small, Andy tells

us, but both he and his wife spend much of their time there, building items for their home. That shop is going to look even nicer with the WORKBENCH Handsaw on display. This magnificent example of the sawsmith's art has a cast-aluminum handle with a solid-walnut grip. The blade is shiny and very sharp. The Award shield, and Mr. Rorer's name are etched into the blade and will not wear away, even if the saw should be used. Generally this saw from the Disston Division of the H. K. Porter Company never is used by our winners but becomes a proud trophy on the wall of a workshop or den.

To enter the contest send us two views of any project made from plans in WORKBENCH from any issue since Nov.-Dec., 1960. No entries can be acknowledged or returned. Black and white photos only, please.



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Bathroom Magazine	Corner Shelf	Colonial Washstand	Spoonholder and Planter
Tissue Back	Octagon End Table	Cobbler's Bench	
Lyre Table			
No. 3 Gun Cabinet Series	10 plans for gun cabinets and gun racks	From 1 to 12 guns	
No. 4 Spice Cabinet Series.	10 differently designed Spice Cabinets		
No. 5 Wall Shelf Series	10 differently designed Wall Shelves.		
No. 6 Grab Bag Series (20 Plans)	3 Bookcases	Book Shelf	Closet Door Shelf
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	2 Magazine Racks	Corner Cupboard	Library Table
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	Workbench	Record Holder	
	Pipe Rack	Foot Stool	
No. 7 Cape Cod Series	Gov. Winthrop Commode	Old Tavern Commode	Colonial Dough Box
Early American Buffet	Dower Chest	Kraut Step Table	Apothecary Chest
Pier Cabinet	Kraut Step Table	Cranberry Scoop	
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No. 8 Modern Series	Corner Cupboard	Book Case	Foot Stool
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Telephone Stand	Telephone Stand	Blanket Chest	
Laundry Hamper	Laundry Hamper	Book Rack	
No. 9 Outdoor Projects	Plastic Table	Wheelbarrow Planter	Garden Bench
Chair Garden Swing	Chair Garden Swing	Trash Can Holder	Portable Garden Chair
Trestle Patio Table	Trestle Patio Table	Mobile Chaise Lounge	
Trestle Patio Bench	Trestle Patio Bench	Tilt-Top Table/Bench	
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Research Department

Each issue in this column we will choose questions on home and shop subjects from letters sent to us. Only those questions which have wide appeal will be answered here. Questions on specialized subjects will be answered by individual letter from the Research Editor's Desk.

While doing some plumbing work recently I had trouble with the pipe collapsing under wrench pressure. A friend of mine says an internal pipe wrench is available for such situations. Is there such a tool?

M. L. T., Bradbury, Vt.

Is there a difference between a nail and a tack, or do nails just become tacks when they get small? Also, I'm confused by terms like "carpet tacks" and "carpet nails" and the like.

Mrs. L. G. Mc., Laramie, Wyo.

According to the Hillwood Mfg. Co., a large manufacturer of tacks, a tack is a breed apart from nails. Tacks generally are 1 1/8 in. or less in length, with the smallest about 3/16 in. The smallest tack is called No. 1, with the largest No. 24. Some wire tacks do resemble nails, others are made by cutting wedge-shape bits of metal and forming a head and point on them. All tacks have a needle point to permit pushing them into the work so they are positioned for hammering. Some tacks are blue in color and are sterilized. This is for those workers who hold them in their mouths while working. For more tack information: R. Potokar, Hillwood Mfg. Co., 21700 St. Clair Ave., Cleveland 17, Ohio.

Yes, this is a cam-operated device that jams itself inside a pipe, thus avoids collapsing it. It is necessary to use a different-size wrench for each size of pipe. Internal pipe wrenches can be ordered from Brookstone Co., Worthington, Mass. 01098. This company, incidentally, sells many hard-to-get tools: Pin wrenches, miniature flexible files, reamers from drill-size 80 on up. We suggest home-shop owners send for their catalog.

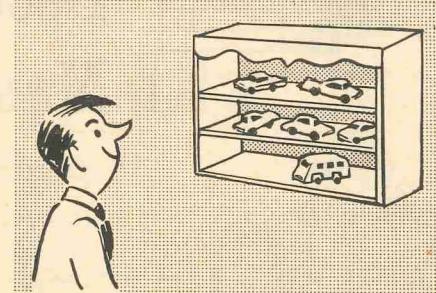
I have used wood putty for repairing wood surfaces for many years but now have a problem. Paneling around a fireplace presents a vertical surface where it is difficult to get the putty to stick, and there is carving that must be duplicated.

L. K. G., Detroit, Mich.

You might try a new moldable epoxy putty now on the market. This material comes in two putty-like sticks, and you cut off equal lengths and work the material in your hands until the color is uniform. The material then can be forced into place and will not run, drip or sag. While plastic it can be shaped and molded by hand or with tools to duplicate carvings. The putty will harden in 1 1/2 hrs., be completely cured in 12 hrs. When hard it can be drilled, sanded, carved, filed or painted. Available where do-it-yourself supplies are sold "Furniture Fix" is a product of Atlas Mineral Products Div., Electric Storage Battery Co., Mertztown, Pa.

We want to create an "automobile" motif in our recreation room and would like some miniature cars to be displayed on whatnot shelves. We do not want to assemble them from kits, and kit-size cars are too big for our purpose.

C. D. R., Denver, Colo.



We would suggest the "Matchbox" series of miniatures, which are 3 in. or less in length. Cars are finely detailed, down to the interior, some cars even have spring suspension. The cars are about 50 cents at toy and hobby shops. Made by Lesney Prod., the cars are distributed by Fred Bonner Corp., 120 East 23rd St., New York City. An interesting catalog is available from Bonner free on request.

We have several glazed-ceramic figurines that have been broken, what is a good glue for repairing them?
D. D. C., Buffalo, N.Y.



There are a number of good adhesives on the market that can be used for this type repair. The newest we have heard of is called Guild Formula, a fine white powder to which water is added. It can be used to fill in cracks or build up missing areas. As it sets it expands, filling every pore and crack, and it dries as hard as bisque or China. It can be colored, painted, ground or polished. For descriptive literature about Guild Formula write to: X-Pando Corp., 43-15 36th St., Long Island City, N.Y. 11101.

Have had a hot-water heating system in my home for 5 years. All the piping is $\frac{3}{4}$ -in. copper; water for the system is supplied by a spring. While I have had no trouble with the system, and the spring water is not hard, am wondering if some chemical should be put in the system every couple of years.
O. J. M., Hume, New York.

If, as you say, the water you are using is comparatively soft, you do not need any chemical agents or cleaners. There must be a drain valve at the low point of the system, and opening this should remove any sediment that has collected.

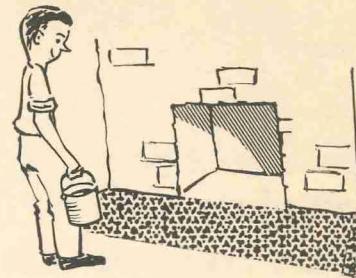
We are installing one of the new suspended-ceiling systems in our old home with high ceilings; is there a way to add supplementary heat with this system?

L. G. R., Great Falls, Mont.

Ideal for spot-heating problem areas, such as bathrooms, is an electric heat panel 2 x 4 ft. in size that will drop into the ceiling grid in place of one of the regular panels. The panels can operate on 110 or 220 volts, and produce over 1,500 B. T. U.s of heat. Called "Nu-Grid", the panels are guaranteed for 5 years. Obtainable from Nu-Wood

Building Supply Dealers, or write to Wood Conversion Co., 1st National Bank Bldg., St. Paul, Minnesota 55101.

I want to make a terrazzo hearth in front of my fireplace rather than using flat stone. Would like to know how to mix cement to make terrazzo; am told one uses white Portland cement and granite chips. What creates the background color? I have red and white granite chips.
D. E. C., Fairmont, Minn.



The cement, or grout, usually is colored for this purpose. Consult with your local building-materials dealer for coloring for cements. He can either supply you or obtain the necessary coloring for you.

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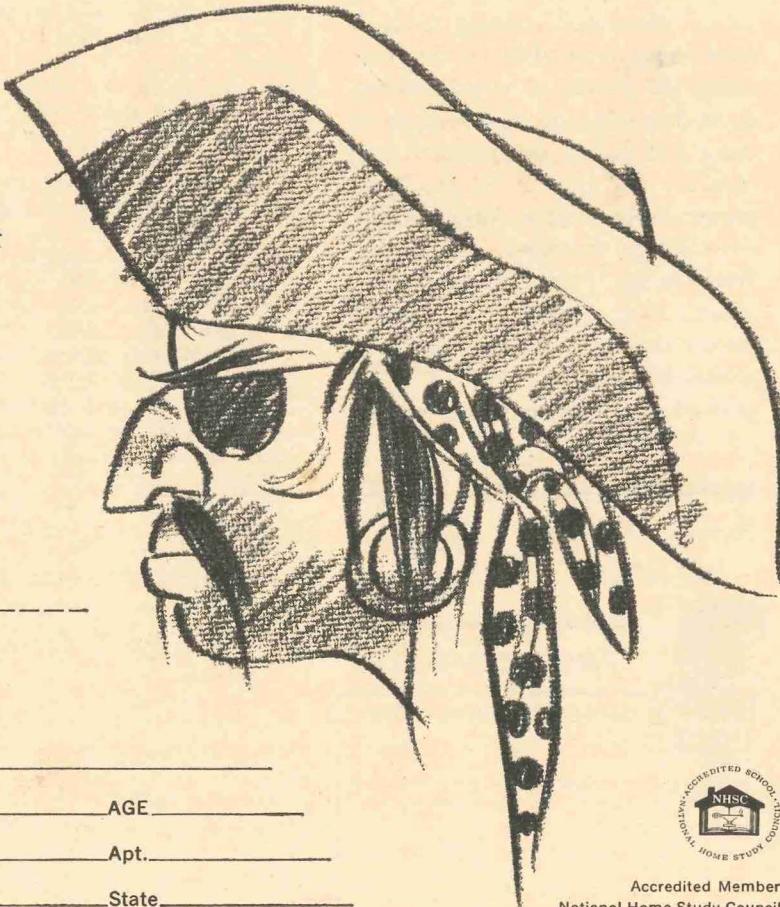
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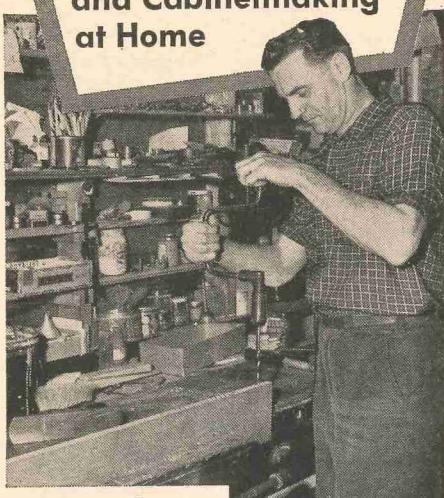
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Veneered Surfaces

W. A. LINCOLN

Before discussing the actual techniques of repairing veneered surfaces it must be understood that there is no modern substitute for the genuine saw-cut veneers that were used on furniture as late as the last part of the nineteenth century.

Modern veneers are knife-cut, and are considerably thinner than the saw-cut material. More important, however, is the fact that even if saw-cut veneers were obtainable, they still would not match the veneer in an antique. The patina of years, the natural aging, cannot be exactly duplicated by any modern finishing methods.

If you need material to repair the veneer on an antique, your best bet is to shop at auctions and in second-hand furniture stores for pieces of old furniture. Even if there are only a couple of good drawer fronts, the item could be well worth the few dollars it cost. Quite a number of small pieces of veneer could be saw-cut from the drawers. If you can find an item with a solid top and ends you will have material for years of repairs.

If it is necessary to use a modern veneer that is 1/28 or 1/20 in. thick, you will have to shim up under it to bring it just slightly above the existing veneer. The patch then can be lightly sanded to make it flush with the older surface. Always use a wood that is lighter in tone than that on the furniture as the finishing materials will darken it.

If an antique piece of furniture has been varnished or French-polished, identifying the kind of wood will not be too difficult, and modern finishing methods can be used to create a close reproduction of the finish. However, if the finish is an oiled or waxed one, and the material is well worked into the wood, identifying the wood can be a problem.

This problem of identification is just as difficult with modern furniture. Terms such as "mahogany-stained," "walnut finish" and similar descriptions are completely misleading, as the wood actually may be birch, boxwood or one of a number of other light-colored woods that take stain well. Close examination of the grain will help, and if you can remove a piece of veneer

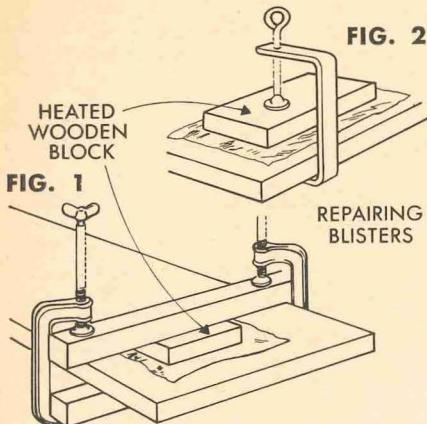
from an inconspicuous place and treat it with paint remover, the wood will appear in its more natural form. The main concern with a repair is to use a wood that has a similar grain or pattern as the existing veneer. Very careful use of stain will permit a close approximation of the color of the original wood.

Getting to the actual repairs of a veneered surface, minor dents can be removed by using a dampened pad of cloth over the spot, with a hot electric iron on the pad. "Steam" the spot a few moments, then examine it. As soon as the dent has been raised flush with the surrounding surface, stop the treatment. Immediately place a piece of waxed paper on the treated spot, and a fairly heavy weight. This is to minimize chances of the veneer delaminating from the groundwork beneath.

If there is an area of veneered surface that sounds hollow when tapped, a loss of adhesion is indicated. Before cutting a slit in the area and introducing new glue, (if an older piece of furniture built before the use of resin glues), consider that perhaps the original glue has dried out and requires only reheating to renew the bond. Place waxed paper on the area, then clamp on a heated wooden block, as in Figs. 1 and 2.

If you find an undamaged blister on a veneered surface it will be free of dirt, so only requires slitting in line with the grain for repair. Warm the blister with a damp pad and hot iron, then work fresh glue under it. Flatten the blister with a veneer roller, wipe off excess glue, then seal the slit with veneer tape. Place a piece of waxed paper or sheet plastic over the repair, then clamp on a heated block.

If you find a blister that is open or cracked it must be assumed that dirt and grease have entered it. Make a special tool by flattening the end of a large nail to create a scraper. First, soften the blister with a moist pad and hot iron. Do not cut the blister across the grain, as such a cut is difficult to conceal. Gently peel back the veneer to allow the insertion of the scraper to remove all old glue and dirt, Fig. 3. Insert fresh glue, press the

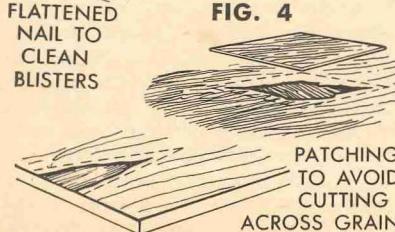


blisters down by hand and apply veneer tape over it. Place waxed paper over this, then apply a heated wooden block and clamp it in place.

Broken or missing veneers are the next step. We will start with small patches. The important thing is to match grain and figure as closely as possible, rather than be too concerned with matching the color. Use a lighter veneer that can be darkened to match. An ideal solution is to use veneer from the same item of furniture. In fact, this is sometimes the best method. Remove a portion of veneer from an unimportant part of a cabinet to patch a prominent feature. This is a case where two repairs are better than one. You can make as close a match as possible in the spot where you removed the veneer, but know it is not quite as important as the first repair. Cut the patch oversize for the area to be repaired, then place it on the damaged area and cut through it with a sharp knife. Remove the patch, deepen the knife cut in the damaged veneer, then warm the area with an iron and damp cloth. Peel off the broken edges of the damage back to the knife cut. Clean the old glue from the groundwork. Check to see that the patch is the correct "face." That is, if the original veneer was part of a match and was positioned with tight pores inward—unavoidable in a four-piece match. The patch must have the same face or the tone difference will be noticeable.



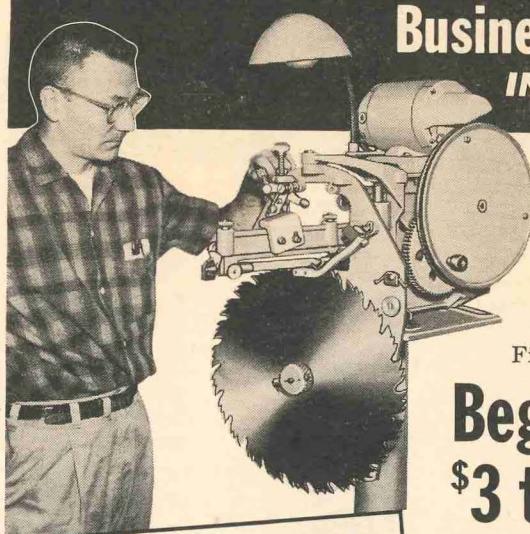
FIG. 3



PATCHING TO AVOID CUTTING ACROSS GRAIN

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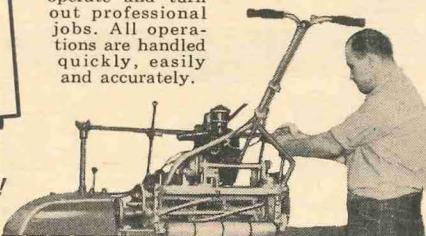
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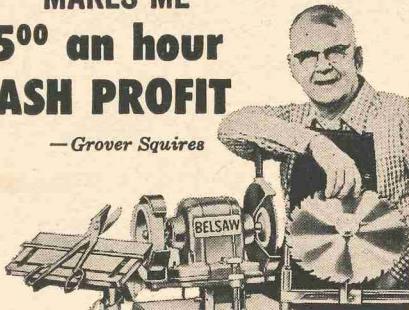
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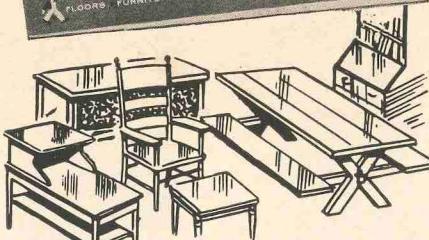


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SHAPES OF VENEER
PATCHES



DISK
(PELLET)

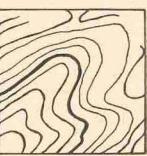


FIG. 5

able. Typical patches are seen in Fig. 4. When patching a burr or butt with a very marked figure, do not use a conventional diamond, boat or disk-shaped pattern, but cut along a strongly-marked feature of grain or pattern and shape the patch accordingly, Fig. 5.

Where doors have been veneered over a solid frame that has shrunk and caused the veneer to split badly, Fig. 6, it sometimes is best to remove a strip all around the door and decorate it with a cross-banding of new veneer, possibly highlighting it with an inlay line.

When one part of a two or four-piece match is badly damaged it may be impossible to duplicate it. In this case, remove the other parts and install a completely new match.

To remove old veneer, (also sometimes necessary when repairing groundwork), first apply a varnish remover to take off the old finish. A waxed finish will require a de-waxing agent. Apply damp cloths to the surface of the veneers and leave overnight. Next day, work over the surface with an iron over a damp pad. Insert a thin, flat blade under the veneer to remove it. As each piece is removed lay it face downwards on a flat board and while it is warm and moist, scrape off the old glue. The removed veneers should be arranged in the pattern they formed on the groundwork, covered with a sheet of clean paper, then clamped between flat boards. Allow the veneer to dry for up to two weeks.

When the veneer is reapplied to the panel, use a contact adhesive designed for veneering. This type cement contains no water, thus the veneers will not curl, and the groundwork will not warp.

Repairing veneers on cylindrical surfaces presents no problems. Wrap the veneer around and overlap the joint which is temporarily secured with veneer pins. Cut through the overlap as in Fig. 7. Nip the points off the veneer pins to prevent splitting. Bind the whole assembly with webbing or canvas. Soak with hot water and allow to dry, if possible near a source of

heat. This will contract the material and exert uniform pressure. If a contact adhesive is used, simply wrap the veneer firmly except at the overlap. Cut through, peel off the waste, then use a veneer roller to press down the veneer on each side of the joint.

To repair a veneered molding, first cut a block as close to the contour of the molding as possible. You may, in some cases, have to make a plaster cast of the molding. Now, place a sheet of sandpaper on the molding—it should be about as thick as the veneer—and rub the shaped block on it to create a perfect fit. The veneer then is glued to the molding and the shaped block clamped against it.

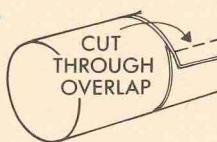
Repairing veneer on a piece of modern furniture is similar to the method used on antiques. You first cut the patch and temporarily fix it in place over the damaged area with a couple of spots of white glue. Keep the grain and figure of the patch as closely aligned with the damaged veneer as possible. Next, trace around the patch with a sharp knife, cutting into the old veneer. Pry off the patch, then carefully chisel out the damaged veneer to the knife cut. (Modern resin glues generally are not softened by heat or moisture.) With practice, both patch and the original veneer can be cut through simultaneously for a perfect fit.

Another method of matching a patch to an existing veneer is to steam the edges free, (if a glue that will react to heat and moisture), and pry up the edges of the damaged area. The patch material then is inserted under the edge of the damaged area and aligned with the veneer in much the same manner that a piece of veneer is aligned in the "window" method of inlaying when making a veneer picture. When the grain and pattern are aligned as closely as possible, a sharp knife is used to cut through the existing veneer and into the patch. The patch then is removed and the knife mark is cut through to create a perfect patch. △ △

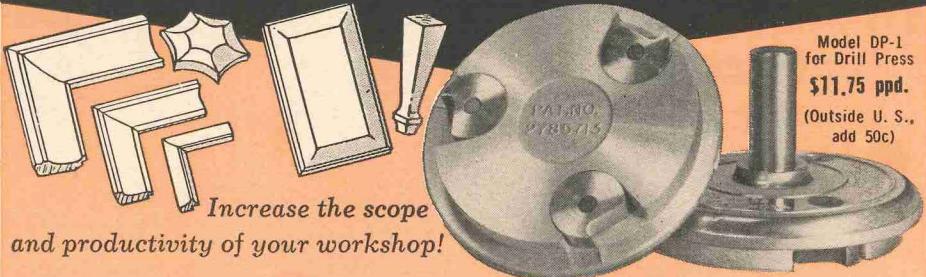
FIG. 6



FIG. 7



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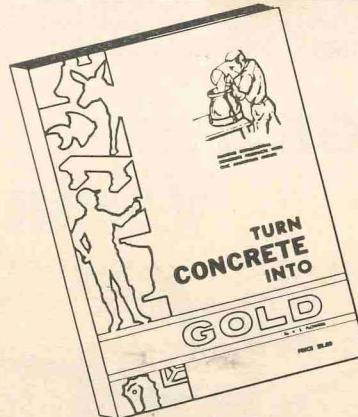
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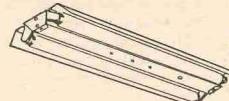
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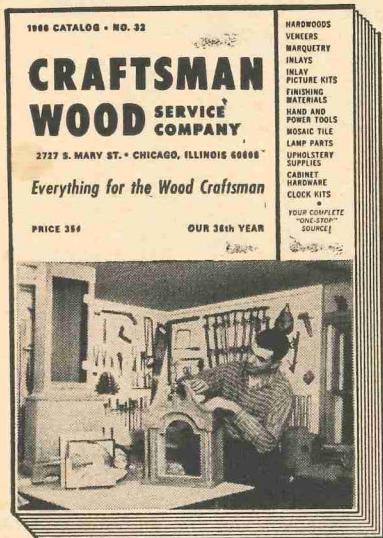
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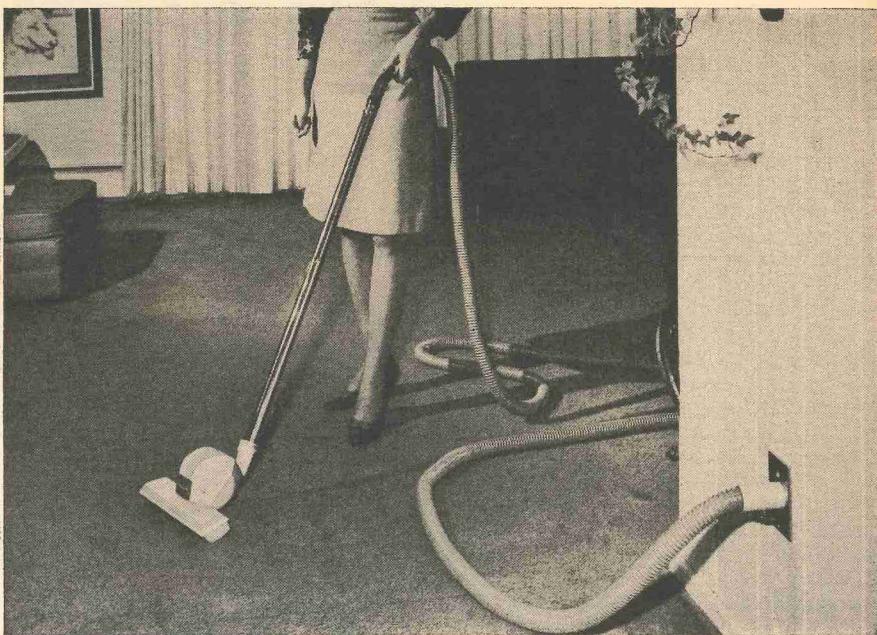
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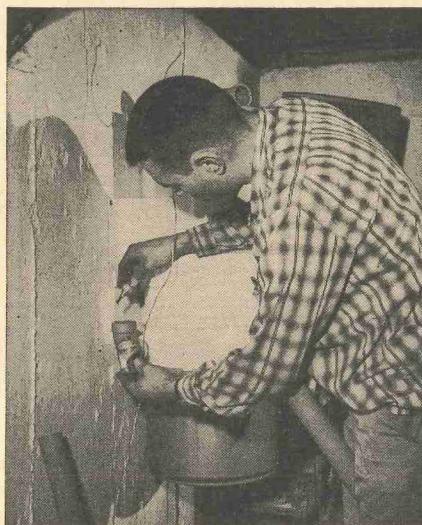
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Central Vacuum-Cleaning System



1. Actuating switches are connected from outlets to cleaner motor with low-voltage, (24 volts) wiring.



Get rid of your wife's noisy vacuum cleaner and have a quieter home! But, be sure to provide her with a device that has three to four times the cleaning power of the discarded vacuum and lets her do the work in about half the time. The only indication that this new vacuum cleaner exists are wall plates in a couple of rooms in the home. The inconspicuous plates are much like those on wall receptacles, and can even be fitted in the floor when necessary. A lightweight hose 30 ft. long is simply plugged into an outlet and the remotely-located vacuum cleaner starts up automatically. Removing the hose shuts it off. Because the cleaner is so powerful, cleaning need be done less often. Also, spilled liquids can be picked up from a carpet or floor; even sugar can quickly be removed from the floor. A 5-gal. tank on the cleaner needs to be cleaned only about three times a year.

Any handy home owner can install the system himself. First the unit is bolted to the wall of the basement or garage. Plastic pipe and fittings, Fig. 2, then are cemented together and led along under the floor and up through the wall to the selected locations. Because of the

2. After bolting cleaner tank to wall of garage or basement elbow is cemented to tank, pipes cemented to it.



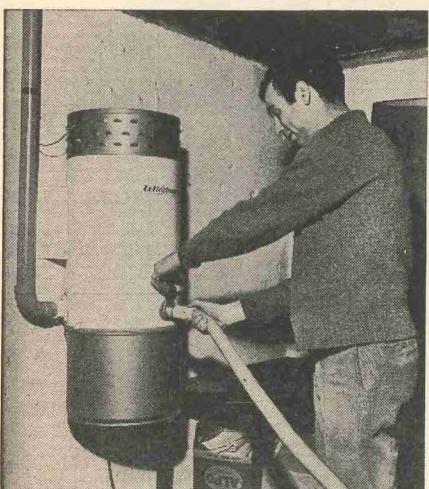
3. Hole is cut in wall, vacuum inlet fitted in place. Note the two-wire lead for the low-voltage system.

30-ft. hose, most homes need only two or three outlets to permit cleaning every room. The wiring for the switch that turns the cleaner on and off is light gauge, Fig. 1, as it carries only 12 volts. Two wires are led from each outlet to the motor, Fig. 3.

An added bonus for Dad is that there is an outlet built right into the tank, Fig. 4, so the garage or basement can be vacuumed readily. The powerful unit will pick up nails, sawdust, metal filings, glass particles and other debris that would collect in a basement or garage workshop.

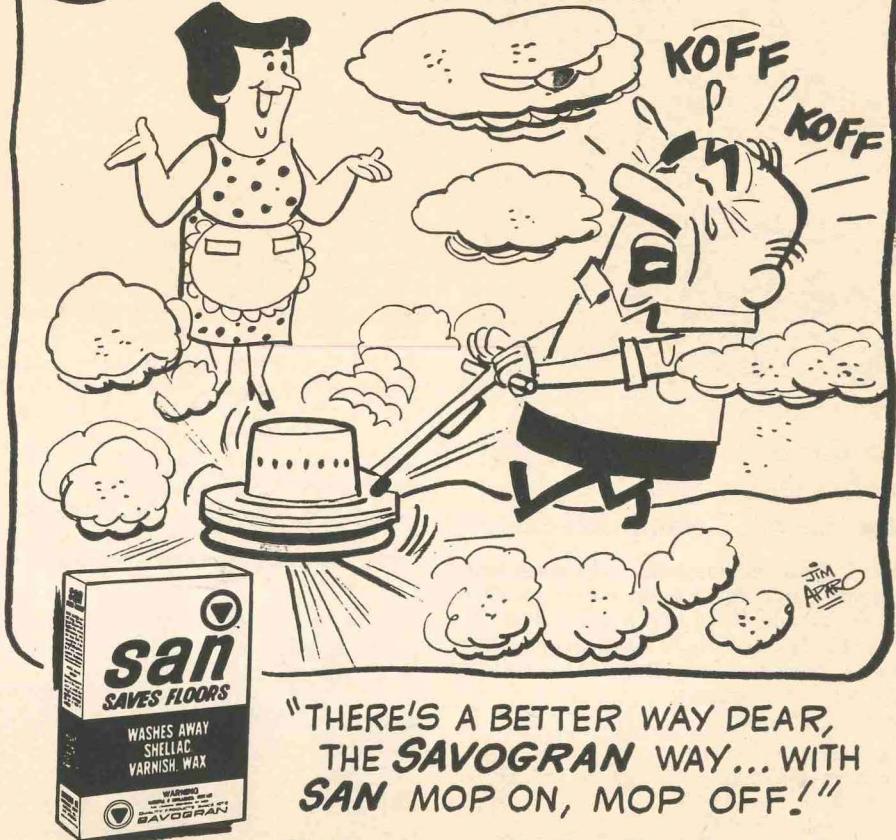
No extra wiring needs to be run from the cleaner to the fuse box, as ordinary 110-volt household current will power the motor in the unit. Simply plug the motor into the nearest receptacle.

Furnished with the cleaner besides the 30-ft. hose are the usual attachments; carpet nozzle, upholstery tool, crevice tool, wall brush, and wand to which the attachments are fitted. For more information on the Nautilus Whirlaway and the name of your nearest dealer write: Nautilus Industries, Inc., Freeland, Pa. △ △



4. For quick clean up of garage or basement, (location of tank), fitting in tank permits connecting hose.

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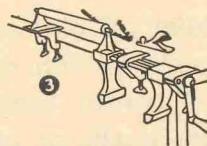
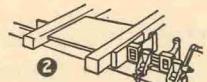
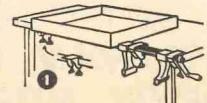
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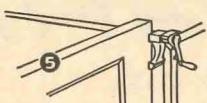
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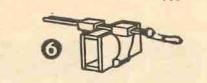
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There is plenty to see in the new world of glass. Pittsburgh Plate Glass Company, for instance, has developed a new glass that is four to five times stronger under impact than ordinary glass of the same thickness. Thus glassed-in porches and sliding glass doors now can be made safer. Called "Herculite K," the new glass when it is struck hard enough to break crumbles to

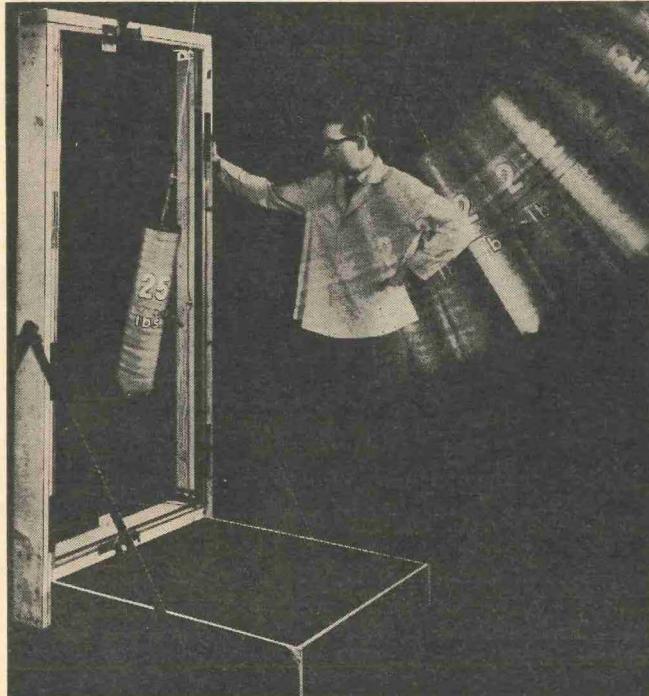
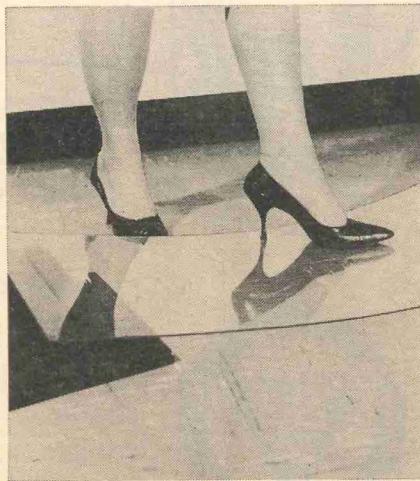
small pieces that appear like rock candy, rather than breaking into sharp shards as ordinary glass.

Glass now can be colored in hues that range from bright gold to charcoal, as well as the dark gray or green used for "building sun glasses."

Plate glass used to be polished to make it flat. Now, the glass is floated out of the ovens on a bath of hot tin. The hot glass ends up perfectly flat and exceptionally brilliant.

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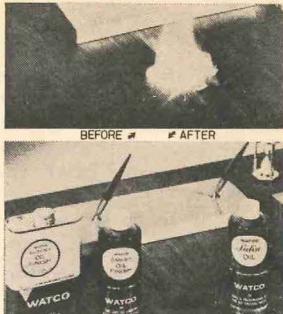
Just recently Pittsburgh Plate Glass Company showed a variety of new glass to leading architects, and of thirty products, only two were in existence just ten years ago. There is much that is new in glass, as you can see, or see through! △ △



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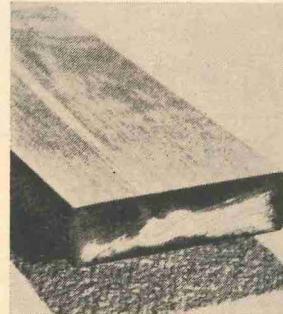
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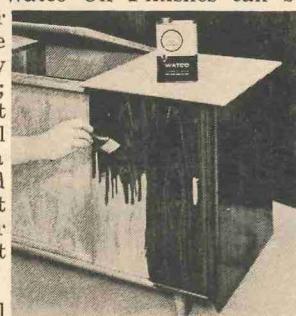
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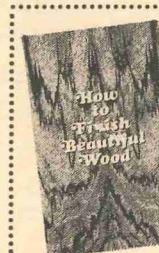


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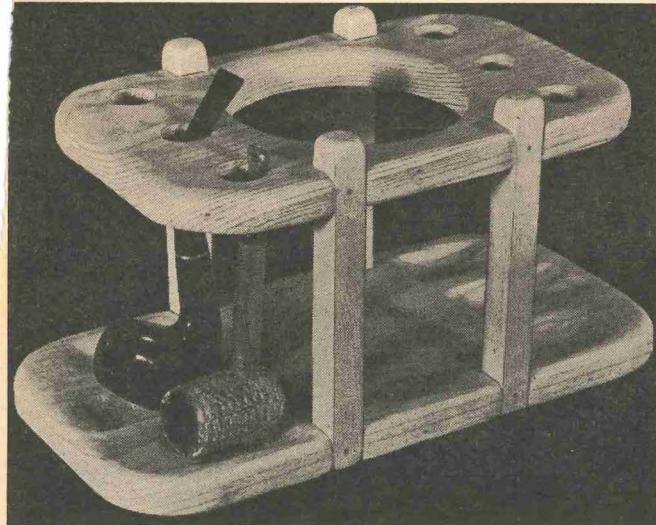
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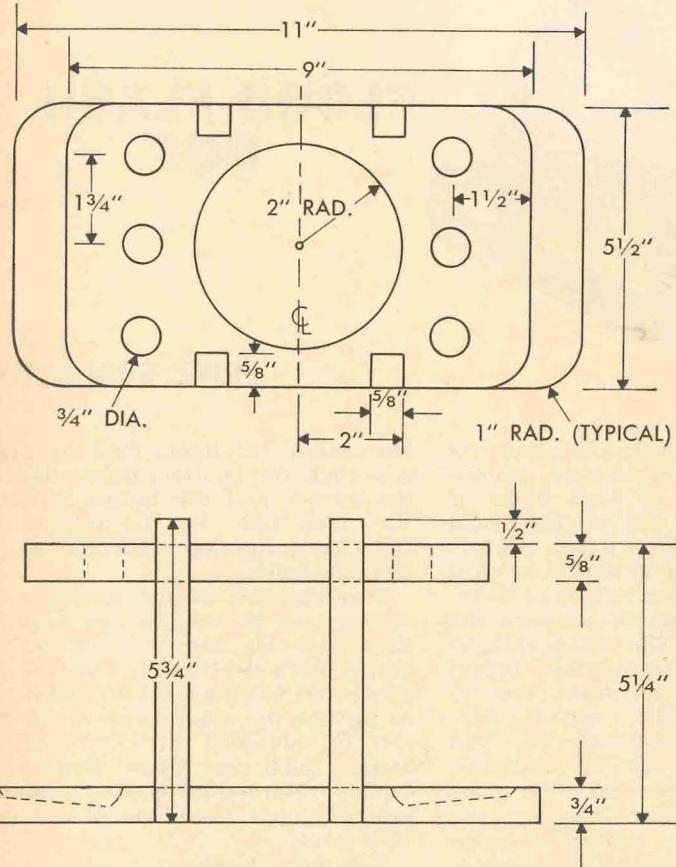
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PIPE RACK

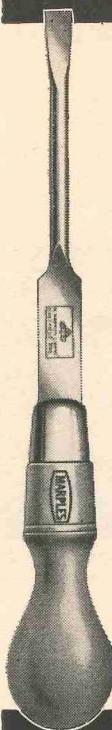


(Hand-Tool Project)

About 20 in. of 1 x 6, or pieces cut from the ends of fruit boxes are used to make the top and bottom of this rack. Four strips $\frac{5}{8}$ in. square are used to join them. Before cutting the hole for the canister check to be sure it is a size that will fit a canister you have on hand. The holes for the pipe stems can be drilled with a bit and brace. The depressions for the pipe bowls are made with a gouge; a chisel can be used but will require a lot of sanding to round the depressions.

Cut the notches for the uprights by making two cuts with a back saw, then chiseling out the waste. Give the over-all project a "carefully-careless" look so that any errors look deliberate. △ △

SEE WHAT THE ENGLISH HAVE DONE TO THE SCREWDRIVER



Americans detest English coffee, but love Sheffield tools.

Most persons might offhand think there is not much chance to improve upon the lowly screwdriver.

But the handle of this one is oval instead of round, for better twisting grip. Its blade is flattened to take a wrench when needed. Its bit end is cross ground and that retards slipping. It has the indefinable "feel". Put it to a screw and you will know you have hold of something special.

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FLOOD-FLASH BOX

FRITZ FRANKLYN

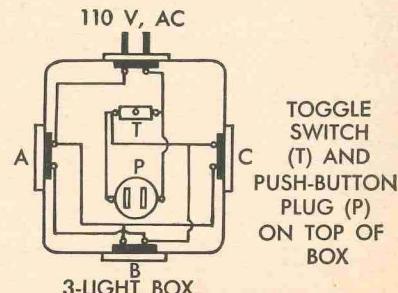
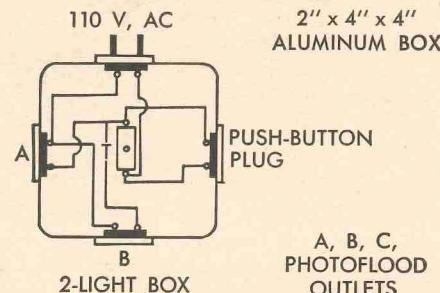
With the unit shown and described you can make "flash-type" photos without the use of flash bulbs or flash gun, using 110-volt household current. Photo flood lamps provide the advantage of letting you know exactly how much light you have, and the best way to arrange the various lamps. The disadvantages are that the extremely hot, bright lights make your subject uncomfortable and usually "squint-eyed."

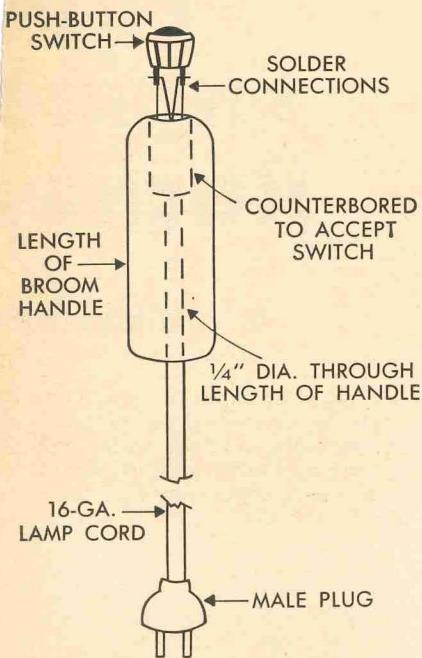
With the Flood-Flash Box you pose the subject, turn on the lights, focus the camera and take your light reading, then turn off the lamps. When the subject is posed and ready you press the push-but-

ton switch, the lights flash on and you click the shutter, then release the switch and the lamps go off. You thus have the advantage of flood lamp lighting, with the speed of flash bulbs.

Two versions of the device are shown; one for one or two lamps, the other for one, two or three lamps. Both are fitted in a standard aluminum box 2 x 4 x 4 in. The box, as well as the other parts required can be obtained at radio-supply houses such as Allied Radio in Chicago, Burstein Applebee in Kansas City and Lafayette Radio in New York.

Depending on the unit made, you





will require three or four flush female plugs and one male plug. Also required is a heavy-duty single-pole, single-throw toggle switch that turns the lamps on and off. The push-button switch is a "normally-off type" and is fitted with 10 ft. of two-strand wire and a male plug.

Install the various plugs, (the three-lamp unit will require that a female plug be fitted in the cover of the box), then wire according to the diagram. Solder all connections, and tape any that might possibly contact other wires or the box and cause a short circuit. Use 12 or 14-ga. wire, nothing smaller. The push-button switch is installed in a length of dowel or broomstick as shown, wired to the extension cord fitted with a male plug. Use ordinary household bulbs to check the circuitry when you have completed the unit. The male plug will permit connecting the unit to household current with an ordinary extension cord.

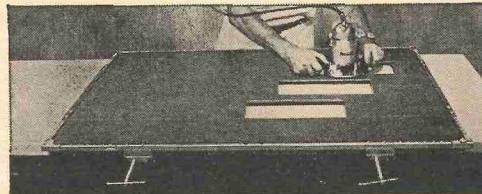
When everything tests satisfactorily, set your camera on a tripod, without film, and make a few test runs using the flood lamps. With the lamps in position flip the toggle switch to "on" and adjust the lighting to suit. Focus the camera, take a light reading, then snap the toggle switch to "push-button". When the model is relaxed, with the right expression, press the push-button to light the floor lamps. Immediately snap the shutter, then release the push-button to shut off the lights. After the practice runs, load the camera with film and you are ready to go. △ △

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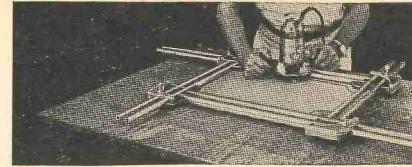


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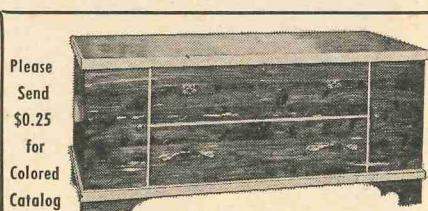
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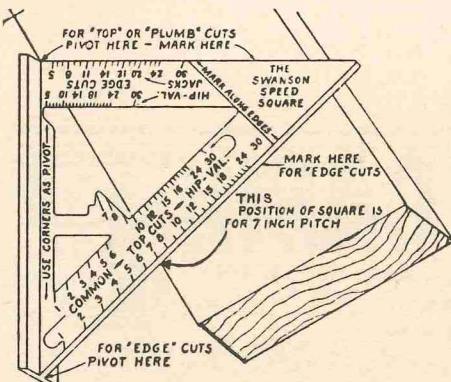
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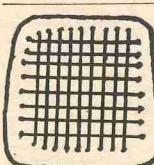
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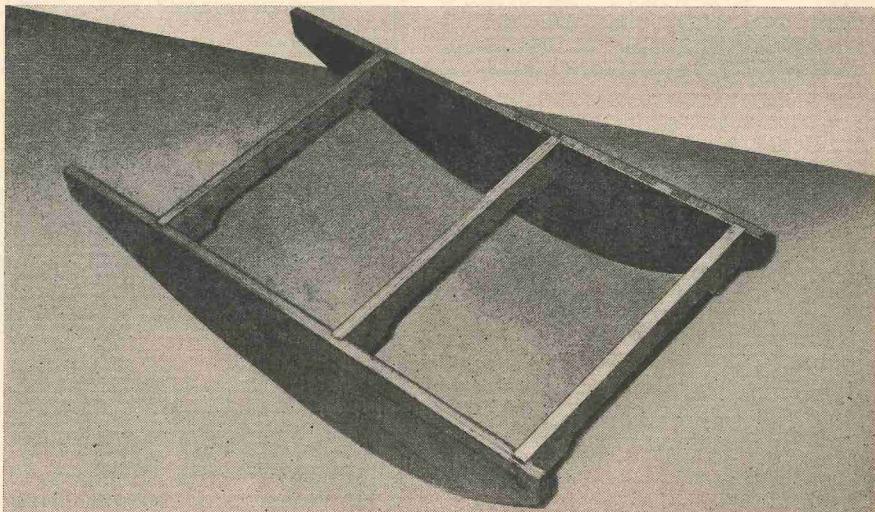
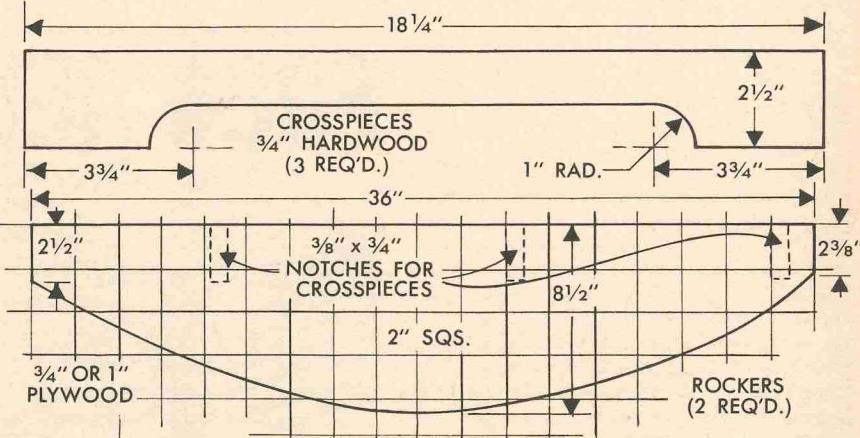


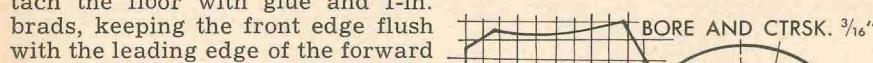
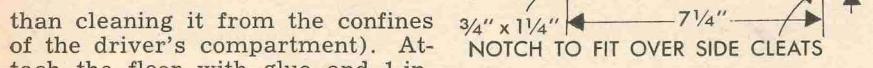
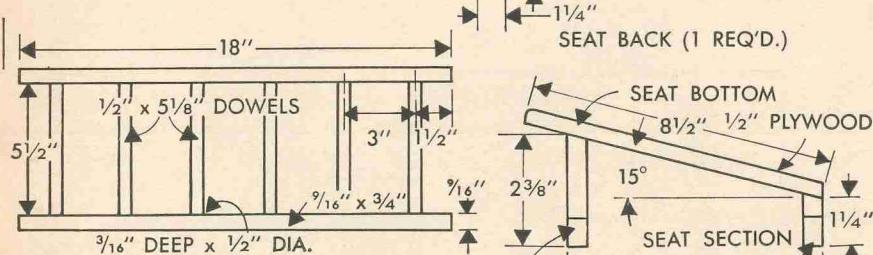
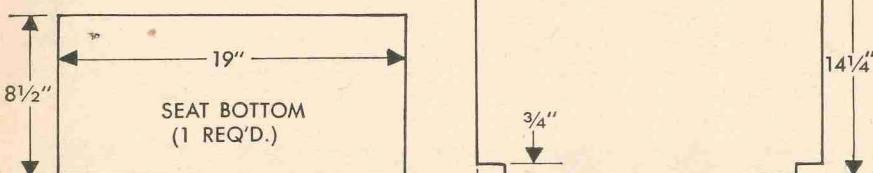
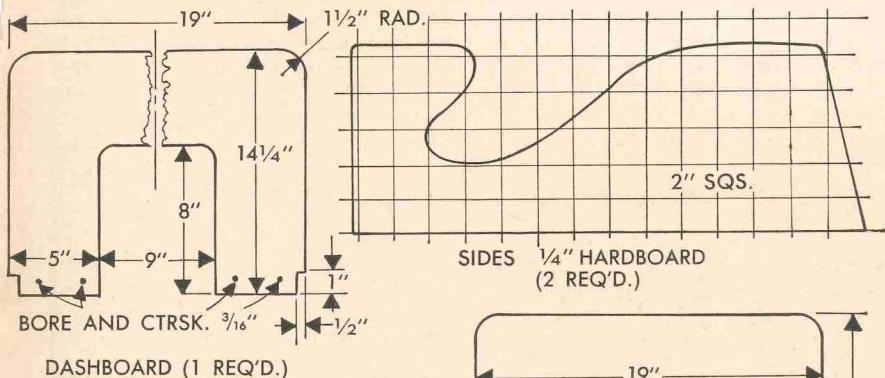
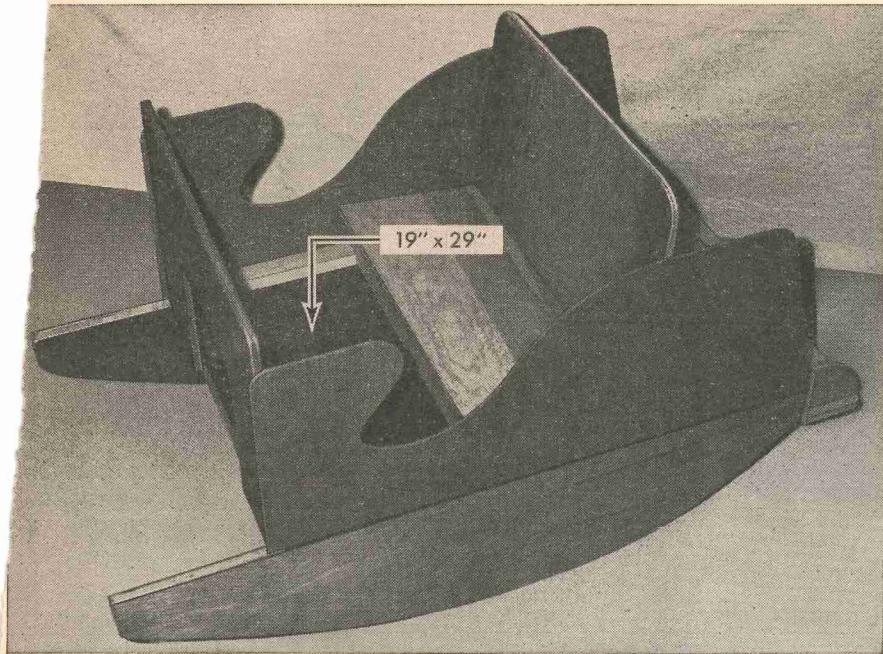
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Start construction by cutting the rockers, clamping the pieces of 3/4-in. plywood or 1-in. solid stock together and cutting them simultaneously to assure they are identical. Cut the dadoes in the rockers, then cut and attach with glue and finishing nails the three crosspieces that hold the rockers together. The floor is next, and it can be almost any type material. Perforated hardboard was used for the original, (dirt and debris from small feet drops through to the floor where it can be vacuumed up more easily)





than cleaning it from the confines of the driver's compartment). Attach the floor with glue and 1-in. brads, keeping the front edge flush with the leading edge of the forward crosspiece. The sides are 1/4-in. hardboard cut to the size and shape shown on the squared drawing. Cut them as you did the rockers to assure they are identical. A cleat is attached to the lower edge of each side, and the cleat, in turn, is fastened to the floor with glue and screws.

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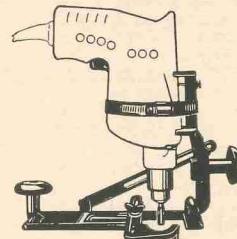
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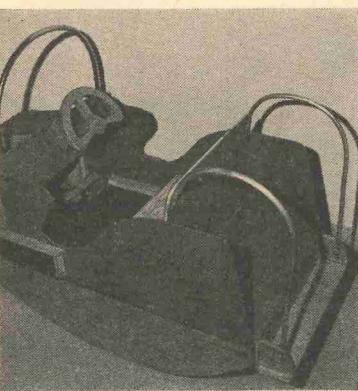
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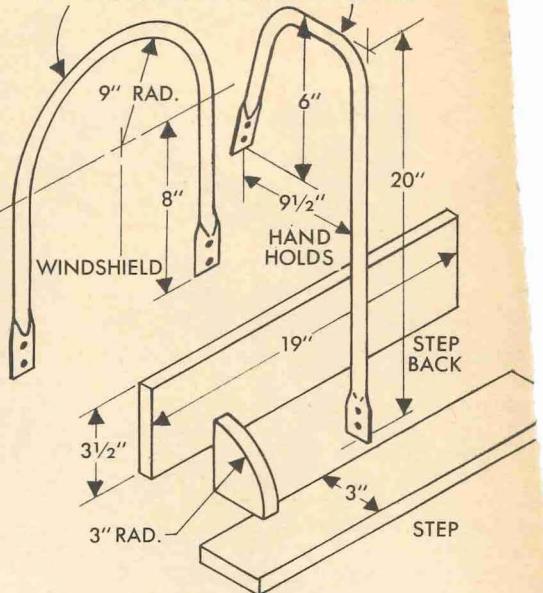
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The dashboard is next, cut to the U-shape indicated and fastened to the forward face of the front cross-piece with glue and screws. Also drive a couple of finishing nails through each side into the dashboard.

At this point install the seat supports. The front one is a piece of 1-in. stock, (or 3/4-in. plywood), with the top angled as indicated. The back cleat is cut as indicated, and both cleats are attached. The seat bottom now is cut and fitted but not fastened in place. The seat back is cut, fitted and attached. Now, cut the two cleats that support the rear deck, the front one being angled as indicated to fit the seat back. The deck is a piece of 1/4-in. hardboard glued and nailed to the cleats. Side cleats provide additional support.

The step at the back of the fire engine is cut from 1/2-in. material, and consists of two quarter-circles for the ends, the step and back. It is attached with glue and screws. The footrest, a length of 1-in. dowel, has flats filed near the ends and is attached to the dashboard with glue and screws. The steering column and steering wheel are next in the assembly and are attached to the center of the dashboard as indicated. (For small toddlers that could fit two on the seat you might want to offset the wheel so one could "drive" while the other was a "passenger".)

The "chassis" is complete at this stage and you now assemble the hood, grill and headlights. This part of the fire engine is assembled as a unit, then slipped onto the chassis

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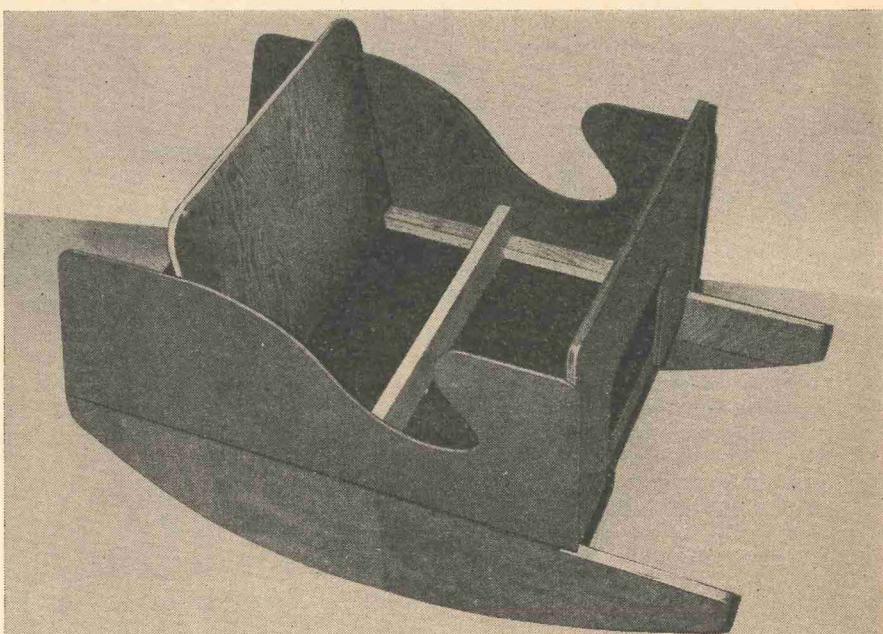
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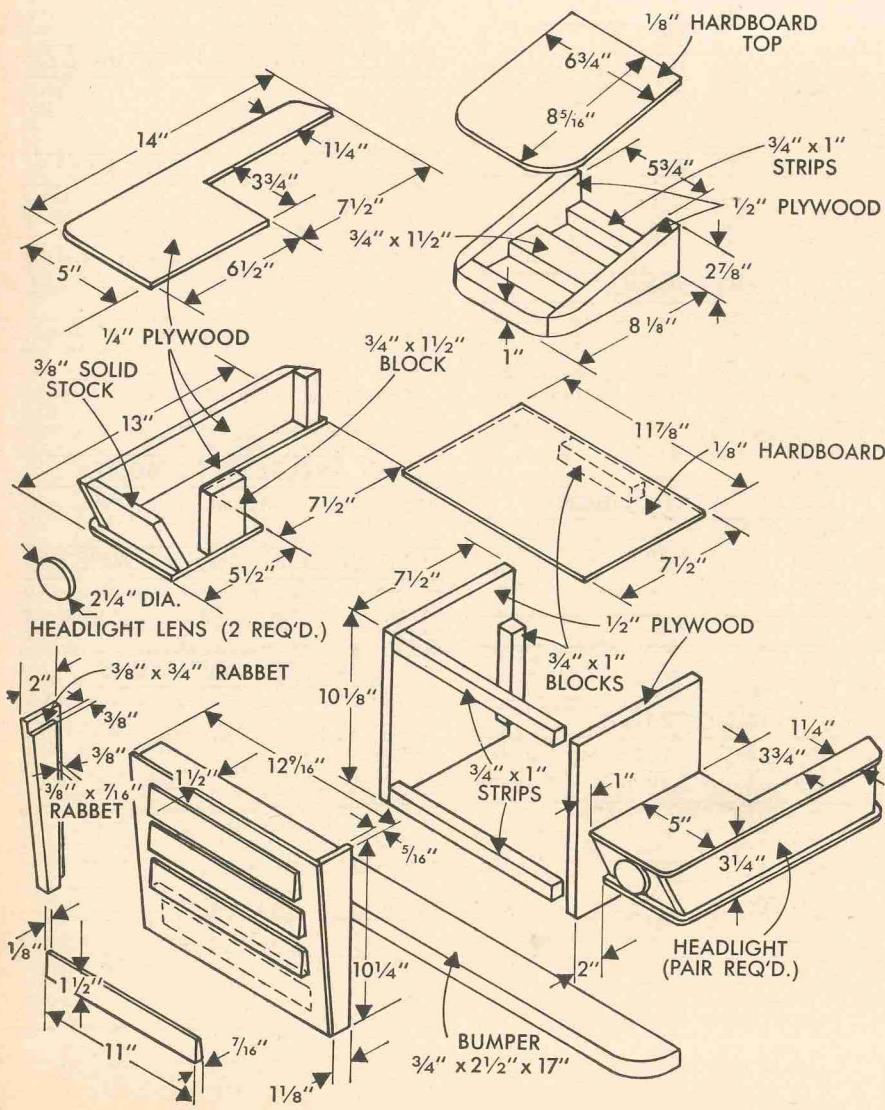
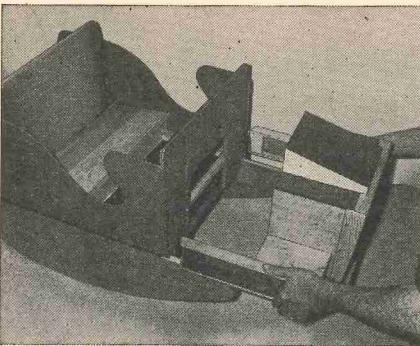
nd fastened with glue and screws. adders are assembled next and stened permanently to the sides i the fire engine. (If the ladders re left loose a toddler might use ne to climb up somewhere he hould not.)

For the windshield frame and the land holds at the back of the fire engine chrome-plated tubing is best, as it adds an attractive gleam. You might be able to find the tubing at a junk yard, or possibly it can be purchased from a plumbing-supply house. If chrome-plated tubing is not available, use $\frac{1}{2}$ -in. thin-wall electrical conduit. It can be polished with sandpaper and steel wool, then coated with clear lacquer. You might also wish simply to paint it.

The seat now is removed, a pad of 1-in. foam rubber is fitted to it, and plastic upholstery material is wrapped around it and the edges tacked or stapled to the underside. A separate board is used for the seat back and it is upholstered in a similar manner. Both seat and back

are fastened with brads through the sides. The back also has a few screws driven through the fixed member of the back into the upholstered board.

The fire engine is painted a brilliant red, the grill frame and bumper are black. The grill louvers, the steering wheel, headlights and ladders are painted aluminum. You can add accessories as desired; a bulb horn and rear-view mirror for a bicycle are on the original. △△



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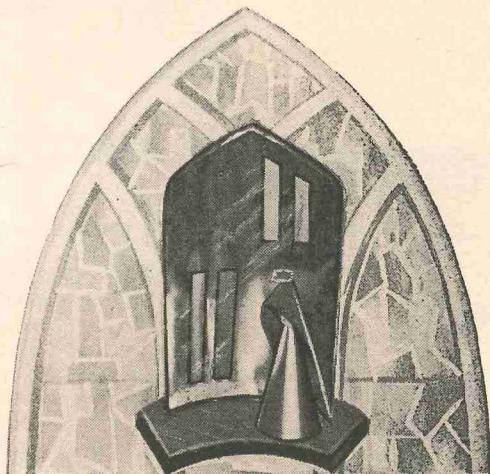
NEWELL WORKSHOP, Dept. WB
19 Blaine Ave., Hinsdale, Ill.

SAY YOU SAW IT IN
WORKBENCH

WORKBENCH

Women's Page

MADONNA and WINDOW

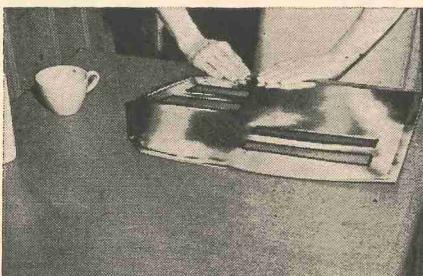


JEANNE PROPST

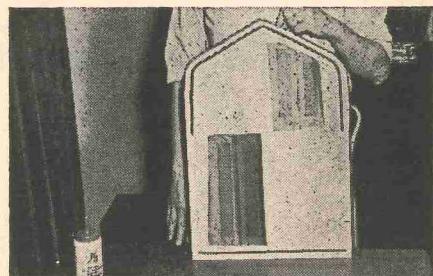
The size of the Madonna and window can be changed to suit; a smaller version would go well on mantel or table, a larger size could be used on a lawn for an outdoor decoration. The size shown is ideal for a holiday window or medium-size table.

Originally conceived as a project in paper sculpture, the window and figure can readily be made with wood turnings and hardboard or do-it-yourself sheet aluminum. In the latter cases a wooden base with a curved slot is required to hold the window upright and in an arc.

For paper sculpture use one sheet

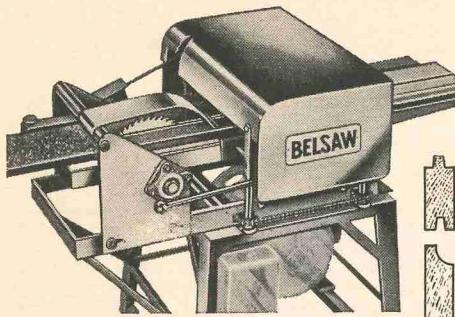


"Window" made of foil paper is glued together at edges, the plain sides of the paper being fitted together.



If foil paper is used, this is what back of one sheet will look like. Pipe cleaners are at top and bottom.

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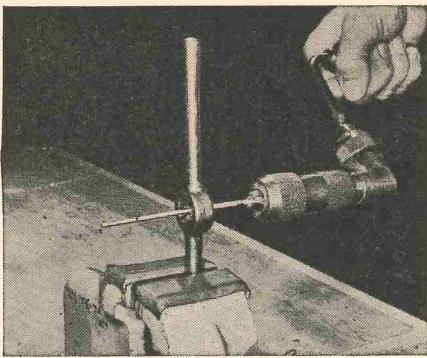
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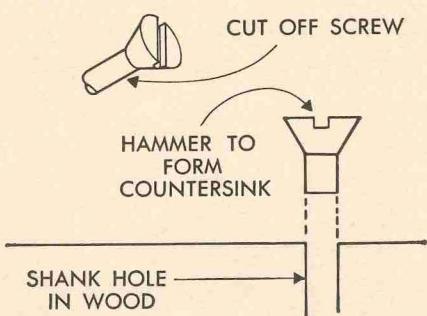
SHOP TIPS

Threading Slender Rods



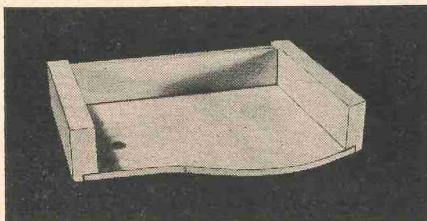
When straightened lengths of wire or rod must be threaded for several inches, a wood-boring brace will save time and effort. Start the thread with the die in the usual way, then grip the die stock in a vise, and wire or rod in the chuck of the brace. Apply oil to the work and turn the brace slowly.

Improvised Countersink



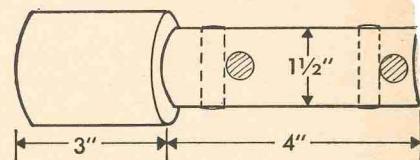
If you lack the correct countersink when driving large flathead screws in soft wood, just cut off one of the screw heads and use it by hammering it into the drilled pilot holes. This stunt will work in some hardwoods, especially if the screws are small.

Extra Drawer Space



Insetting a drawer bottom in rabbets instead of the usual groove can deepen a drawer as much as $\frac{1}{2}$ in. Not a large figure, but important when the drawer is quite shallow to start.

Wood-To-Pipe Joint

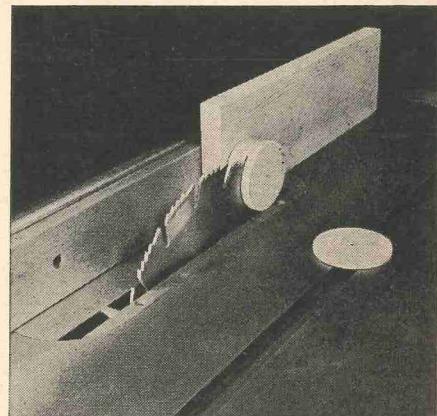


Had occasion to turn four shouldered wooden "feet" to fit in four $1\frac{1}{2}$ -inch legs under a meat-cutting block. The problem here is that the hardwood legs will slide out of the pipe easily, the grain being parallel to the pipe. To overcome this I turned the shouldered pieces, then drilled holes at right angles in the smaller-diameter portion. Dowels were driven in, cut off, then turned down on the lathe so they projected slightly. When the "feet" were driven into the pipe, the lengthwise expansion of the dowels kept them firmly in place.

Lathe Stunt

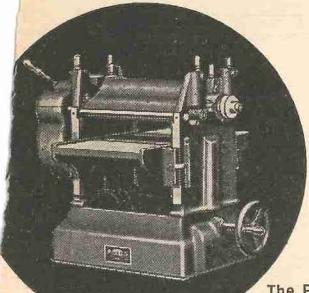
To avoid the quick enlarging of the tailstock hole in soft wood, nail a hardwood block to the end of the work. Use short nails, as they do not have to penetrate too far. This also is a good method to use when doing a "split turning."

Slicing Thin Disks



To reduce the thickness of a small disk, or to form similar thin ones, tack-nail the original to a block of wood that can be used to feed the stock past the blade as shown. Drive the nails in from the back of the feed board. Use two nails to keep the disk from turning, and do not let them penetrate too far where they will be contacted by the blade.

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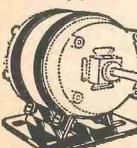
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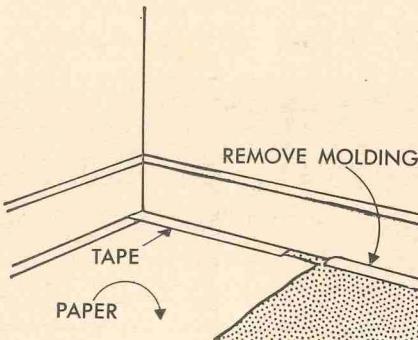
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Painting Baseboards



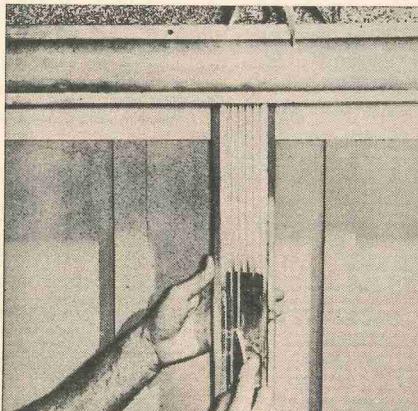
There is no need for a big removal job when painting the baseboard in a room with wall-to-wall carpeting. First, remove the shoe molding, then tape a 3-ft. strip of building or heavy wrapping paper along the place where the shoe molding is removed. After allowing the paint on the baseboard to dry completely, remove the tape and paper. Replacing the shoe molding will cover the unpainted strip where the masking tape was fastened.

D. Bousha, Jackson, Mich.

"Locking" A Wood Screw

If you are worried about vibration loosening a flathead wood screw, "lock" it by drilling a hole through the head into the work. Use a No. 40 drill or smaller and a nail or brad that will fit tightly in the hole.

Downspout Repairs



Aluminum-foil tape is an ideal material for repairing leaky downspouts according to Johns-Manville. The area around the leak first is cleaned with steel wool, then the tape is cut to size and pressed into firm contact with a blunt tool.

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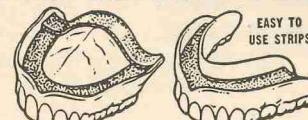
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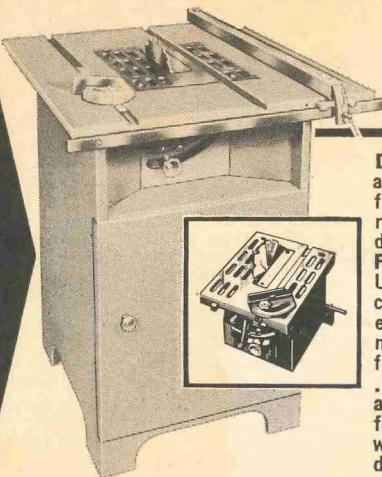
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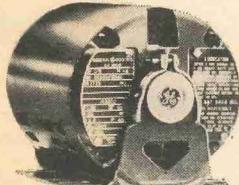
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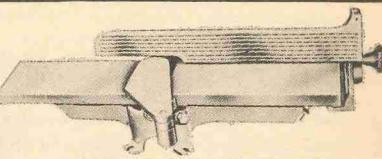
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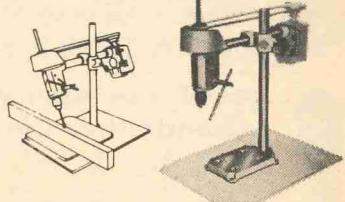
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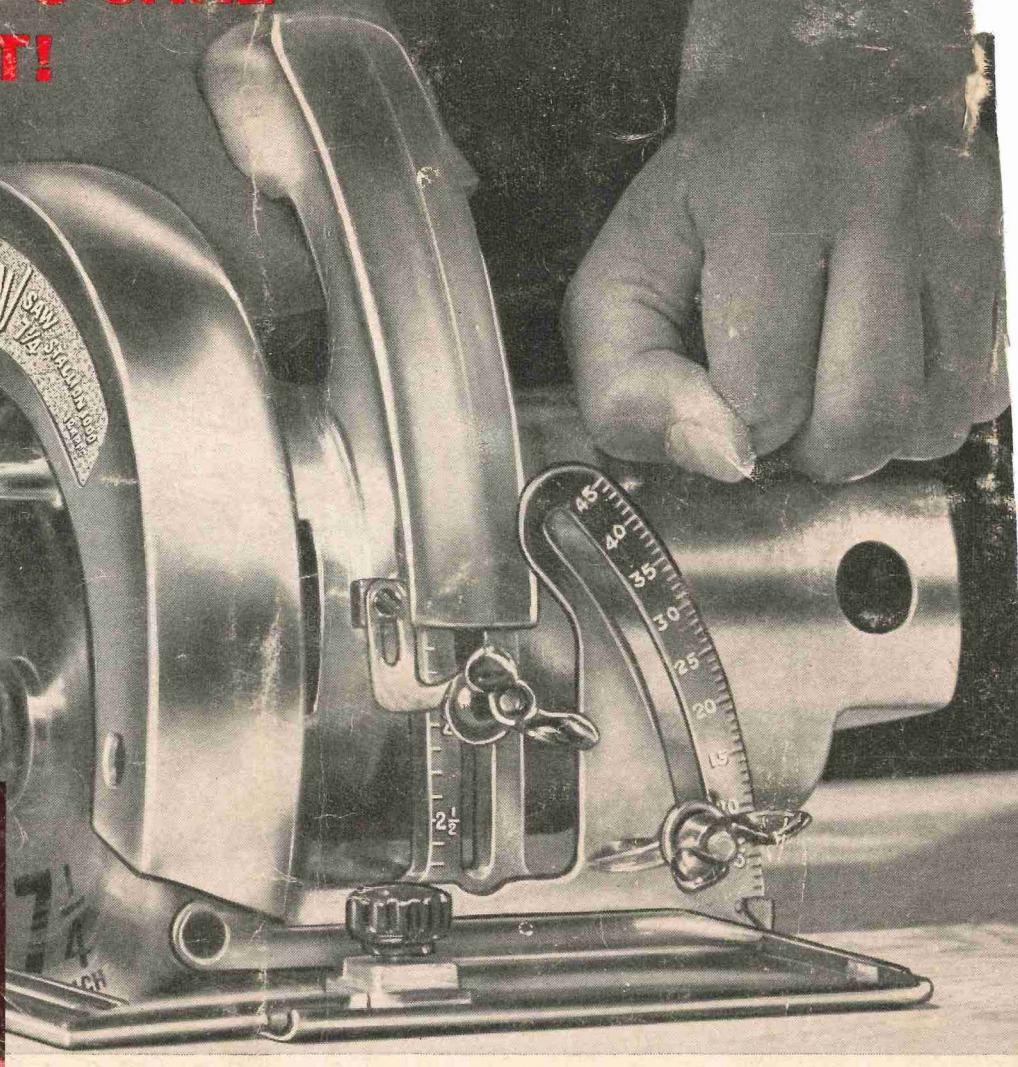
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